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(71)Applicant : NISCA CORP

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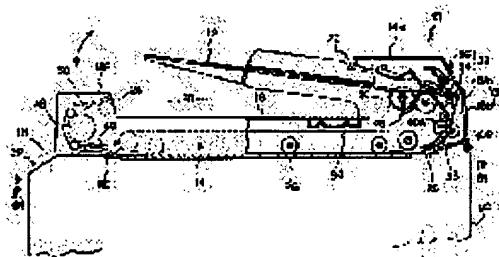
(72)Inventor : OSAWA YUKIO
SHIROKURA MIZUHO
FUKAZAWA EIJI

(54) AUTOMATIC DOCUMENT FEEDER AND METHOD FOR THE FEEDER

(57)Abstract:

PURPOSE: To automatically feed a document of twofold size of a document size which is regulated by the size of a platen glass on the platen glass.

CONSTITUTION: This feeder automatically feeds the document to an electrophotographic device constituted so that the document placed on the platen glass PG on which the document of the specified size is placed so as to cover an almost entire surface is read and scanned along the longitudinal direction of the platen glass PG. The feeder is equipped with a carrying mechanism 26 carrying the document in a direction orthogonal to the longitudinal direction of the platen glass PG and feeding it to the platen glass PG, and a control unit not shown in figure and controlling so that the first half part of the document of twofold size may be fed onto the platen glass PG by driving the carrying mechanism 26 in the case of the document is twofold size of specified size. Then the later half part of the document of twofold size is fed to the platen glass PG by driving the carrying mechanism 26 after finishing image reading operation for the first half part.



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CLAIMS

[Claim(s)]

[Claim 1] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field. In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and when said manuscript is twice the large-sized size of said predetermined size, said conveyance means is driven. Make a part for the first portion of the manuscript of this large-sized size send in on the image reading field of said platen glass, and said conveyance means is driven after termination of the image reading scan for this first portion. The automatic manuscript feed gear characterized by providing the control means which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass.

[Claim 2] Said control means is an automatic manuscript feed gear according to claim 1 characterized by driving said conveyance means after termination of an image reading scan of the second half part of the manuscript of said large-sized size, and making paper deliver to the manuscript of this large-sized size from said platen glass.

[Claim 3] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field. In the automatic manuscript delivery approach for conveying automatically a manuscript twice the large-sized size of said predetermined size The 1st process which is made to convey the manuscript of said large-sized size along the direction which intersects perpendicularly with the longitudinal direction of said image reading field, and sends in a part for the first portion of the manuscript of this large-sized size on the image reading field of said platen glass, The automatic manuscript delivery approach characterized by providing the 2nd process which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass after termination of the image reading scan for said first portion.

[Claim 4] The automatic manuscript delivery approach according to claim 3 characterized by providing further the 3rd process to which the manuscript of said large-sized size is made to deliver from said platen glass after termination of an image reading scan of a part said second half.

[Claim 5] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field. In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and when said manuscript is twice the large-sized size of said predetermined size, said conveyance means is driven. A part for the first portion of the manuscript of this large-sized size is sent in on the image reading field of said platen glass. Output the 1st reading scan enabling signal to said image reader, and said conveyance means is driven in response to the 1st completion signal of a reading scan from said image reader. The second half part of the manuscript of said large-sized size is sent in on the image reading field of said platen glass. Output the 2nd reading scan enabling signal to said image reader, and said conveyance means is driven in response to the 2nd completion signal of a reading scan from said image reader. The automatic manuscript feed gear characterized by providing the control means to which the manuscript of said large-sized size is made to deliver from

said platen glass.

[Claim 6] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript delivery approach for conveying automatically a manuscript twice the large-sized size of said predetermined size The 1st process which is made to convey the manuscript of said large-sized size along the direction which intersects perpendicularly with the longitudinal direction of said image reading field, and sends in a part for the first portion of the manuscript of this large-sized size on the image reading field of said platen glass, The 2nd process which outputs the 1st reading scan enabling signal to said image reader after a part for the first portion of the manuscript of this large-sized size is sent in on the image reading field of said platen glass, The 3rd process which sends in the second half part of the manuscript of said large-sized size on the image reading field of said platen glass in response to the 1st completion signal of a reading scan from said image reader, The 4th process which outputs the 2nd reading scan enabling signal to said image reader after the second half part of the manuscript of this large-sized size is sent in on the image reading field of said platen glass, The automatic manuscript delivery approach characterized by providing the 5th process to which the manuscript of said large-sized size is made to deliver from said platen glass in response to the 2nd completion signal of a reading scan from said image reader.

[Claim 7] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass The body attached in the top face of said image reader free [rotation] in said platen glass between a wrap lock out location and the open position which opens this platen glass, While being attached in this body and laying the manuscript of the usual size below said predetermined size An installation means by which a manuscript twice the large-sized size of said predetermined size is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, It is attached in said body and the manuscript laid in said installation means is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of said body, The automatic manuscript feed gear characterized by providing the 2nd delivery means which makes the manuscript of said large-sized size which the reading scan ended deliver to the side of said body.

[Claim 8] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass The body attached in the top face of said image reader free [rotation] in said platen glass between a wrap lock out location and the open position which opens this platen glass, While being attached in this body and laying the manuscript of the usual size below said predetermined size An installation means by which a manuscript twice the large-sized size of said predetermined size is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, It is attached in said body and the manuscript laid in said installation means is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st location which the reading scan ended and which the top face of said body is made to usually deliver to the drive of said conveyance means with the manuscript of size, The automatic manuscript feed gear characterized by providing the change means changed between the 2nd location which the side of said body is made to deliver to the drive of said conveyance means with the manuscript of said large-sized size which the reading scan ended.

[Claim 9] Said body is an automatic manuscript feed gear according to claim 7 or 8 which is the back end edge and is characterized by being supported to revolve by the top-face back end edge of said image reader free [rotation].

[Claim 10] The image reading field of said platen glass is installed in longitudinal-direction sideways to an actuated valve position. Said installation means It is attached in the posterior part of said body, and has the manuscript base where a manuscript is laid upward in a manuscript side. Said manuscript An automatic manuscript feed gear given in claim 7 which taking-in conveyance is once carried out towards a back side from said manuscript base, and is

characterized by being conveyed on said platen glass where a front flesh side is reversed in the shape of U character thru/or any 1 term of 9.

[Claim 11] The manuscript of said large-sized size is an automatic manuscript feed gear according to claim 10 characterized by turning termination of said read operation to after and said actuated valve position, and delivering paper to a near side.

[Claim 12] Said change means is an automatic manuscript feed gear according to claim 8 characterized by to change and to have the change driving means which the gate and said manuscript bring said change gate to the 1st location when [said] it is usually size, and brings said change gate to the 2nd location when [said whose manuscript is said large-sized size] arranged free [rotation] between said 1st location and 2nd location.

[Claim 13] It has image reading field platen glass laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass Free [rotation between a wrap lock out location and the open position which opens this platen glass], while being attached in the top face of said image reader, said platen glass The body with which manual bypass insertion opening with which manual bypass of the manuscript twice the large-sized size of said predetermined size is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles, and which is inserted was formed, An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of said body, The automatic manuscript feed gear characterized by providing the 2nd delivery means which makes the manuscript of said large-sized size which the reading scan ended deliver to the side of said body.

[Claim 14] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass Free [rotation between a wrap lock out location and the open position which opens this platen glass], while being attached in the top face of said image reader, said platen glass The body with which manual bypass insertion opening with which manual bypass of the manuscript twice the large-sized size of said predetermined size is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles, and which is inserted was formed, An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said platen glass. The conveyance means for sending in on the image reading field of this platen glass, and in case said manuscript is sent in on the image reading field of platen glass In case it is scrupulous and there is nothing in the size of said manuscript, said conveyance means is driven so that it may be conveyed along a predetermined direction, and paper is delivered to said manuscript from platen glass When the size of said manuscript is said usual size In being said large-sized size as it conveys along said predetermined direction and paper is delivered to the top face of said body and The automatic manuscript feed gear characterized by providing the control means which carries out drive control of said conveyance means so that it may convey along an opposite direction with said predetermined direction and paper may be delivered from said manual bypass insertion opening.

[Claim 15] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass Free [rotation between a wrap lock out location and the open position which opens this platen glass], while being attached in the top face of said image reader, said platen glass The body with which manual bypass insertion opening with which manual bypass of the manuscript

twice the large-sized size of said predetermined size is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles, and which is inserted was formed, An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on this platen glass image reading field, and said 1st location which the reading scan ended and which the top face of said body is made to usually deliver to the drive of said conveyance means with the manuscript of size, The automatic manuscript feed gear characterized by providing the change means changed between the 2nd location which the side of said body is made to deliver to the drive of said conveyance means with the manuscript of said large-sized size which the reading scan ended.

[Claim 16] Said body is an automatic manuscript feed gear given in claim 13 which is the back end edge and is characterized by being supported to revolve by the top-face back end edge of said image reader free [rotation] thru/or any 1 term of 15.

[Claim 17] Said platen glass is installed in longitudinal-direction sideways to an actuated valve position in an image reading field. Said installation means It is attached in the anterior part of said body, and has the manuscript base where a manuscript is laid upward in a manuscript side. Said manuscript An automatic manuscript feed gear given in any 1 term of claims 13, 14, and 16 which taking-in conveyance is once carried out towards said actuated valve position at a near side from said manuscript base, and are characterized by being conveyed on said platen glass where a front flesh side is reversed in the shape of U character.

[Claim 18] The automatic manuscript feed gear according to claim 11 or 17 characterized by providing further a stop means to stop the delivery direction back end by predetermined thrust in case paper is delivered to the manuscript of said large-sized size.

[Claim 19] Said stop means is an automatic manuscript feed gear according to claim 18 characterized by having the press member which forces and stops the delivery direction back end of the manuscript of said large-sized size by predetermined thrust on said platen glass.

[Claim 20] Said platen glass is installed in longitudinal-direction sideways to an image reading field WP actuated valve position. Said installation means It is attached in the anterior part of said body, and has the manuscript base where a manuscript is laid upward in a manuscript side. Said manuscript The automatic manuscript feed gear according to claim 15 which taking-in conveyance is once carried out towards said actuated valve position at a near side from said manuscript base, and is characterized by being conveyed on said platen glass where a front flesh side is reversed in the shape of U character.

[Claim 21] The automatic manuscript feed gear according to claim 20 characterized by providing further a stop means to stop the delivery direction back end by predetermined thrust in case paper is delivered to the manuscript of said large-sized size.

[Claim 22] Said stop means is an automatic manuscript feed gear according to claim 21 characterized by having the press member which forces and stops the delivery direction back end of the manuscript of said large-sized size by predetermined thrust on said platen glass.

[Claim 23] The change gate in which said change means was arranged free [rotation] between said 1st location and 2nd location, The size of said manuscript brings said change gate to the 1st location, when [said] it is usually size. It is the automatic manuscript feed gear according to claim 22 which is equipped with the change driving means which brings said change gate to the 2nd location when it is said large-sized size, changes to said press member, and is characterized by the gate consisting of same members.

[Claim 24] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass The body attached in the top face of said image reader free [rotation] in said platen glass between a wrap lock out location and the open position which opens this platen glass, While being attached in said body movable between the 1st location in which it is located above the top face of this body, and the 2nd location which projects in the side of this body and laying the manuscript of the usual size below said predetermined size in it The manuscript base in which a manuscript twice the large-sized size of said predetermined size is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, When said manuscript base is located in the 1st location, the manuscript

laid in this manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The 1st conveyance means for sending in on the image reading field of this platen glass, When said manuscript base is located in the 2nd location, the manuscript laid in said manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The automatic manuscript feed gear characterized by providing the 2nd conveyance means for sending in on this platen glass, and the paper output tray to which the manuscript which it was arranged on the top face of said body, and the reading scan ended is delivered.

[Claim 25] The automatic manuscript feed gear according to claim 24 characterized by laying the manuscript of said large-sized size in said manuscript base which the manuscript of size is usually laid and is in said 2nd location in the manuscript base in said 1st location.

[Claim 26] When said manuscript is said large-sized size, said conveyance means is driven. Make a part for the first portion of the manuscript of this large-sized size send in on the image reading field of said platen glass, and said conveyance means is driven after termination of the image reading scan for this first portion. An automatic manuscript feed gear given in any 1 term of claims 7, 8, 13, 14, 15, and 25 characterized by providing further the control means which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass.

[Claim 27] When said manuscript is said place large-sized size, said conveyance means is driven. A part for the first portion of the manuscript of this large-sized size is sent in on the image reading field of said platen glass. Output the 1st reading scan enabling signal to said image reader, and said conveyance means is driven in response to the 1st completion signal of a reading scan from said image reader. The second half part of the manuscript of said large-sized size is sent in on the image reading field of said platen glass. Output the 2nd reading scan enabling signal to said image reader, and said conveyance means is driven in response to the 2nd completion signal of a reading scan from said image reader. any 1 term of claims 7, 8, 13, 14, 15, and 25 characterized by providing further the control means to which the manuscript of said large-sized size is made to deliver from said platen glass -- alike -- the automatic manuscript feed gear of a publication.

[Claim 28] Said paper output tray is an automatic manuscript feed gear according to claim 24 or 25 characterized by bringing the location rotated from said evacuation location to the upper part when the evacuation location which approached the top face of said body when it was attached movable to said body and said manuscript base was located in the 1st location is brought and said manuscript base is located in the 2nd location.

[Claim 29] Said paper output tray is an automatic manuscript feed gear according to claim 24 or 25 characterized by to provide further a interlocking means are attached movable to said body, and bring said paper output tray to the location rotated from said evacuation location to the upper part when the evacuation location which approached the top face of said body when said manuscript base was located in the 1st location is brought and said manuscript base is located in the 2nd location.

[Claim 30] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass and the size of said manuscript When [which shows that smaller than said predetermined size it is usually size] size information is usually brought about The automatic manuscript feed gear which carries out drive control of said conveyance means so that a manuscript may be conveyed continuously, and is characterized by providing the control means which carries out drive control of said conveyance means intermittently when the large-sized size information which shows that it is bigger large-sized size than said predetermined size is brought about.

[Claim 31] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. When [to which the size of said manuscript indicates it to be a conveyance means for sending in on this platen glass that smaller than said predetermined size it is usually size] size information is usually brought about The automatic manuscript feed gear characterized by

providing the control means which this manuscript is conveyed through the 1st conveyance way, and makes this manuscript convey through the 2nd conveyance way when the large-sized size information which shows that it is bigger large-sized size than said predetermined size is brought about.

[Claim 32] It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field. In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. When [to which the size of said manuscript indicates it to be a conveyance means for sending in on this platen glass that smaller than said predetermined size it is usually size] size information is usually brought about When the large-sized size information which drives said conveyance means continuously, conveys this manuscript through the 1st conveyance way, and shows that it is bigger large-sized size than said predetermined size is brought about The automatic manuscript feed gear characterized by providing the control means which said conveyance means is driven [control means] intermittently and makes this manuscript convey through the 2nd conveyance way.

[Claim 33] It is an automatic manuscript feed gear given in any 1 term of claims 30, 31, and 32 which it has a distinction means to distinguish the size of said manuscript, this distinction means usually outputs size information to said control means when the distinguished manuscript size is usually size, and are characterized by outputting large-sized size information to said control means when the distinguished manuscript size is large-sized size.

[Claim 34] It is the automatic manuscript feed gear according to claim 33 characterized by equipping said distinction means with the manual bypass sensor which detects that the manuscript was inserted in manual bypass insertion opening, and for this manual bypass sensor usually outputting size information to said control means in the condition that the manuscript is not inserted here, and outputting large-sized size information to said control means in the condition that a manuscript is inserted here.

[Claim 35] The manuscript base arranged movable between the 1st location in which the manuscript of said large-sized size is laid, and said 2nd location in which the manuscript of size is usually laid is provided further. Said distinction means It has the manuscript base sensor which detects the location of this manuscript base. This manuscript base sensor When said large-sized size information is outputted to said control means when said manuscript base is located in the 1st location, and said manuscript base is located in the 2nd location, it is said automatic manuscript feed gear according to claim 33 usually characterized for size information by said thing [carrying out a control means output].

[Claim 36] Said 1st conveyance way on said platen glass from manuscript taking-in opening with which the manuscript of size is usually incorporated Said carrying-in way which usually conveys the manuscript of size, It has the 1st delivery way where said platen glass to the 1st delivery opening discharges the manuscript of usual size [finishing / image reading]. Said 2nd conveyance way The automatic manuscript feed gear according to claim 31 or 32 characterized by having said carrying-in way and the 2nd delivery way where said platen glass to the 2nd delivery opening discharges the manuscript of large-sized size [finishing / image reading].

[Claim 37] Said 1st conveyance way on said platen glass from manuscript taking-in opening with which the manuscript of size is usually incorporated Said carrying-in way which usually conveys the manuscript of size, It has the 1st delivery way where said platen glass to the 1st delivery opening discharges the manuscript of usual size [finishing / image reading]. Said 2nd conveyance way The manual bypass conveyance way which conveys the manuscript of said large-sized size on said platen glass from manual bypass insertion opening with which manual bypass insertion of the manuscript of large-sized size is carried out, The automatic manuscript feed gear according to claim 31 or 32 characterized by having the 2nd delivery way where said platen glass to the 2nd delivery opening discharges the manuscript of large-sized size [finishing / image reading].

[Claim 38] Said 2nd delivery opening is an automatic manuscript feed gear according to claim 37 characterized by being formed [said / manual bypass insertion opening and].

[Claim 39] Said distinction means is an automatic manuscript feed gear according to claim 33 characterized by being arranged in said image reader side.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention is equipped with the platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field. The automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass, And it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. It is related with the automatic manuscript delivery approach for conveying automatically the manuscript of larger size than said predetermined size to the image reader constituted so that the reading scan of the image of the manuscript laid on the image reading field of this platen glass might be carried out along with the longitudinal direction of this image reading field.

[0002]

[Description of the Prior Art] On the platen glass with which the manuscript of equipments which have an image reading function at least, such as an electronic reproducing unit, is laid conventionally, various automatic manuscript feed gears for conveying a manuscript automatically are known, and are offered by practical use. Moreover, although the electronic reproducing unit which can copy the manuscript of large-sized size like A3 size in office etc. begun to be used conventionally, what was constituted on a large scale is offered so that power feed of a large-sized size manuscript like A3 size can be carried out that an automatic manuscript feed gear should correspond to this.

[0003] Generally carrying out a division copy on the other hand, in recent years using the electronic reproducing unit which pressed down platen glass with A3 size, since it enlarges too much also to remainder and there is a problem in respect of the point of an installation tooth space or cost, when there is a request which copies the manuscript of A2 size twice the magnitude of A3 size, on the other hand the area of platen glass is make equivalent to A2 size is perform.

[0004] A part for the first portion which is equivalent to A3 size first in the manuscript of A2 size is specifically copied in the form of A3 size. Next, a part is copied like the form of A3 size the second half in which it is equivalent to A3 size. Both are joined together. Obtain the copied form of A2 size or The contraction copy of the part is carried out at about 70% like the form of A4 size the second half which the contraction copy of the part for the first portion equivalent to A3 size is carried out at about 70% at the form of A4 size, next is equivalent to A3 size, and he joins both together, and is trying to obtain the copy image of A3 size. Moreover, when using the so-called digital type electronic reproducing unit with which practical use is beginning to be presented in recent years, image reading is carried out by the first portion. Make memory once memorize the image information for this first portion, next carry out image reading of the part in the second half, memory is made to memorize the image information of a part this second half, both are compounded, and also making it copy in the form of A3 size is performed in the condition of having reduced to about 70%.

[0005]

[Problem(s) to be Solved by the Invention] However, it sets to the automatic manuscript feed gear of a configuration conventionally. There is no configuration which power feed of the manuscript of such large-sized size can be first carried out [configuration] by the first portion, and power feed of the second half part of this can be carried out [configuration] after the image reading scan termination for this first portion, and can carry out image reading of the part this second half. This sake, In copying the manuscript of large-sized size by the electronic reproducing unit which has platen glass of A3 size By hand, an operator sets first a part for the first portion of the manuscript of A2 size on platen glass, and is copy actuation () of this. Or the manuscript of large-sized size must be moved by hand after

completion of an image reading scan, the second half part of this must be set on platen glass, the activity is troublesome and solution is demanded.

[0006]

[Objects of the Invention] Accomplishing this invention in view of the situation mentioned above, the purpose of this invention is offering the automatic manuscript feed gear which can convey automatically a manuscript twice the size of the manuscript size specified in the size of the image reading field of platen glass on the image reading field of platen glass, and the automatic manuscript delivery approach.

[0007] Moreover, another purpose of this invention is offering the automatic manuscript feed gear which can also convey automatically a manuscript twice the size of the size of an image reading field on the image reading field of platen glass, and the automatic manuscript delivery approach while the manuscript of the size below the manuscript size specified in the size of the image reading field of platen glass is automatically made by conveyance ***** on the image reading field of platen glass.

[0008] Moreover, other purposes of this invention are offering the automatic manuscript feed gear which can be automatically conveyed one by one on the image reading field of platen glass where it divided into one half the manuscript twice the size of the manuscript size specified in the size of the image reading field of platen glass and it is divided, and the automatic manuscript delivery approach.

[0009]

[Means for Solving the Problem] In order to solve the technical problem mentioned above and to attain the purpose, the automatic manuscript feed gear concerning this invention For example, it has platen glass which has the image reading field which according to the publication is laid in claim 1 so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and when said manuscript is twice the large-sized size of said predetermined size, said conveyance means is driven. Make a part for the first portion of the manuscript of this large-sized size send in on the image reading field of said platen glass, and said conveyance means is driven after termination of the image reading scan for this first portion. It is characterized by providing the control means which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass.

[0010] Moreover, the automatic manuscript delivery approach concerning this invention For example, according to the publication of claim 3, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript delivery approach for conveying automatically a manuscript twice the large-sized size of said predetermined size The 1st process which is made to convey the manuscript of said large-sized size along the direction which intersects perpendicularly with the longitudinal direction of said image reading field, and sends in a part for the first portion of the manuscript of this large-sized size on the image reading field of said platen glass, It is characterized by providing the 2nd process which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass after termination of the image reading scan for said first portion.

[0011] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 5, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and when said manuscript is twice the large-sized size of said predetermined size, said conveyance means is driven. A part for the first portion of the manuscript of this large-sized size is sent in on the image reading field of said platen glass. Output the 1st reading scan enabling signal to said image reader, and said conveyance means is driven in response to the 1st completion signal of a reading scan from said image reader. The second half part of the manuscript of said large-sized size is sent in on the image reading field of said platen glass. It is characterized by outputting the 2nd reading scan enabling signal to said image reader, driving said

conveyance means in response to the 2nd completion signal of a reading scan from said image reader, and providing the control means to which the manuscript of said large-sized size is made to deliver from said platen glass.

[0012] Again. According to the publication of claim 6, the automatic manuscript delivery approach concerning this invention It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript delivery approach for conveying automatically a manuscript twice the large-sized size of said predetermined size The 1st process which is made to convey the manuscript of said large-sized size along the direction which intersects perpendicularly with the longitudinal direction of said image reading field of said platen glass, The 2nd process which outputs the 1st reading scan enabling signal to said image reader after a part for the first portion of the manuscript of this large-sized size is sent in on the image reading field of said platen glass, The 3rd process which sends in the second half part of the manuscript of said large-sized size on the image reading field of said platen glass in response to the 1st completion signal of a reading scan from said image reader, The 4th process which outputs the 2nd reading scan enabling signal to said image reader after the second half part of the manuscript of this large-sized size is sent in on the image reading field of said platen glass, It is characterized by providing the 5th process to which the manuscript of said large-sized size is made to deliver from said platen glass in response to the 2nd completion signal of a reading scan from said image reader.

[0013] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 7, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass The body attached in the top face of said image reader free [rotation] in said platen glass between a wrap lock out location and the open position which opens this platen glass, While being attached in this body and laying the manuscript of the usual size below said predetermined size An installation means by which a manuscript twice the large-sized size of said predetermined size is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, It is attached in said body and the manuscript laid in said installation means is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of said body, It is characterized by providing the 2nd delivery means which makes the manuscript of said large-sized size which the reading scan ended deliver to the side of said body.

[0014] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 8, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass The body attached in the top face of said image reader free [rotation] in said platen glass between a wrap lock out location and the open position which opens this platen glass, While being attached in this body and laying the manuscript of the usual size below said predetermined size An installation means by which a manuscript twice the large-sized size of said predetermined size is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, It is attached in said body and the manuscript laid in said installation means is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st location which the reading scan ended and which the top face of said body is made to usually deliver to the drive of said conveyance means with the manuscript of size, It is characterized by providing the change means changed between the 2nd location which the side of said body is made to deliver to the drive of said conveyance means with the manuscript of said large-sized size which the reading scan ended.

[0015] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 13, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading

field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass Free [rotation between a wrap lock out location and the open position which opens this platen glass], while being attached in the top face of said image reader, said platen glass The body with which manual bypass insertion opening with which manual bypass of the manuscript twice the large-sized size of said predetermined size is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles, and which is inserted was formed, An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and said manuscript of said large-sized size usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which was laid in said installation means and which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of said body, It is characterized by providing the 2nd delivery means which makes the manuscript of said large-sized size which the reading scan ended deliver to the side of said body.

[0016] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 14, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass Free [rotation between a wrap lock out location and the open position which opens this platen glass], while being attached in the top face of said image reader, said platen glass The body with which manual bypass insertion opening with which manual bypass of the manuscript twice the large-sized size of said predetermined size is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles, and which is inserted was formed, An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and in case said manuscript is sent in on the image reading field of platen glass In case it is scrupulous and there is nothing in the size of said manuscript, said conveyance means is driven so that it may be conveyed along a predetermined direction, and paper is delivered to said manuscript from platen glass The size of said manuscript in [said] being usually size In being said large-sized size as it conveys along said predetermined direction and paper is delivered to the top face of said body and With said predetermined direction, it is characterized by providing the control means which carries out drive control of said conveyance means so that it may convey along an opposite direction and paper may be delivered from said manual bypass insertion opening.

[0017] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 15, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass Free [rotation between a wrap lock out location and the open position which opens this platen glass], while being attached in the top face of said image reader, said platen glass The body with which manual bypass insertion opening with which manual bypass of the manuscript twice the large-sized size of said predetermined size is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles, and which is inserted was formed, An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st location which the reading scan ended and which the top face of said body is made to usually deliver to the drive of said conveyance means with the manuscript of size, It is characterized by providing the change means changed between the

2nd location which the side of said body is made to deliver to the drive of said conveyance means with the manuscript of said large-sized size which the reading scan ended.

[0018] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 24, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass The body attached in the top face of said image reader free [rotation] in said platen glass between a wrap lock out location and the open position which opens this platen glass, While being attached in said body movable between the 1st location in which it is located above the top face of this body, and the 2nd location which projects in the side of this body and laying the manuscript of the usual size below said predetermined size in it The manuscript base in which a manuscript twice the large-sized size of said predetermined size is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, When said manuscript base is located in the 1st location, the manuscript laid in this manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The 1st conveyance means for sending in on the image reading field of this platen glass, When said manuscript base is located in the 2nd location, the manuscript laid in said manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. It is characterized by providing the 2nd conveyance means for sending in on the image reading field of this platen glass, and the paper output tray to which the manuscript which it was arranged on the top face of said body, and the reading scan ended is delivered.

[0019] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 30, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass and the size of said manuscript When [which shows that smaller than said predetermined size it is usually size] size information is usually brought about Drive control of said conveyance means is carried out so that a manuscript may be conveyed continuously, and when the large-sized size information which shows that it is bigger large-sized size than said predetermined size is brought about, it is characterized by providing the control means which carries out drive control of said conveyance means intermittently.

[0020] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 31, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. When [to which the size of said manuscript indicates it to be a conveyance means for sending in on this platen glass that smaller than said predetermined size it is usually size] size information is usually brought about It is characterized by providing the control means which this manuscript is conveyed through the 1st conveyance way, and makes this manuscript convey through the 2nd conveyance way when the large-sized size information which shows that it is bigger large-sized size than said predetermined size is brought about.

[0021] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 32, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. When [to which the size of said manuscript indicates it to be a conveyance means for sending in on this PURATE glass that smaller than said predetermined size it is usually size] size information is usually brought about When the large-sized size information

which drives said conveyance means continuously, conveys this manuscript through the 1st conveyance way, and shows that it is bigger large-sized size than said predetermined size is brought about. It is characterized by providing the control means which said conveyance means is driven [control means] intermittently and makes this manuscript convey through the 2nd conveyance way.

[0022]

[Example] Below, the configuration of the 1st example of the automatic manuscript feed gear concerning this invention is explained with reference to an accompanying drawing at a detail.

[0023] [the approximate account of the digital type electronic reproducing unit DC] -- the configuration of the digital type electronic reproducing unit (it is only hereafter called a copying machine) DC applied as an example of the image reader with which the automatic manuscript feed gear 10 of this example is attached is first explained roughly with reference to drawing 1 and drawing 2.

[0024] This copying machine DC is a well-known configuration, and is equipped with the platen glass PG (shown in drawing 3) which has the image reading field where the manuscript of A3 size as predetermined size is extensively laid in the top face of the body CB of a copying machine by horizontal ***** in this example. That is, this platen glass PG is arranged in the top face of the body CB of a copying machine by the longitudinal direction oblong to the actuated valve position by the operator while it is formed so that it may have slightly larger size than the manuscript of A3 size. And the control panel CP for setting image reading conditions and copy conditions, such as copy number of sheets and copy concentration, as a part for the long side by the side of this side (transverse plane) is arranged from the platen glass PG of the top face of the body CB of a copying machine.

[0025] And in this body CB of a copying machine, although not illustrated, the reading scanner for carrying out the reading scan of the image of the manuscript laid on the image reading field of platen glass PG optically, the memory section which once memorizes this image information that carried out the reading scan, and the electronic copying machine style for copying a reading image on a form based on the image information memorized by this memory section are arranged. In addition, the reading scanner is constituted so that the reading scan of the manuscript side of the manuscript laid on the image reading field of platen glass PG may be carried out along with the longitudinal direction of platen glass PG.

[0026] In addition, if it waits to input the reading scan enabling signal which shows the set complete from the automatic manuscript feed gear 10 mentioned later to the image reading field top of the platen glass PG of a manuscript, a reading scanner is driven and the reading scan in this reading scanner is completed, the control section which controls this copying machine DC is constituted so that the completion signal of a reading scan may be outputted to the automatic manuscript feed gear 10.

[0027] As shown in [approximate account of whole configuration of automatic manuscript feed gear 10] drawing 1, and drawing 2, the automatic manuscript feed gear 10 of this 1st example It is attached in the back end edge of the top face of a copying machine DC free [rotation], the platen glass PG arranged in the top face of this copying machine DC is extensively rotated from a wrap lock out location and this lock out location to the upper part, and it is set up free [rotation] between the open positions which open platen glass PG extensively.

[0028] This automatic manuscript feed gear 10 is in the condition in a lock-out location so that it may illustrate, incorporates and conveys automatically the manuscript of at least one sheet laid on the manuscript base 12 attached in the ***** side of this automatic manuscript feed gear 10 on the image reading field of platen glass PG, presents copy actuation with it, and it is constituted so that a manuscript may take out from on platen glass PG with termination of copy actuation of this manuscript. On the other hand, although this automatic manuscript feed gear 10 is not illustrated, it is in the condition in an open position, and even if copy actuation is started, it is constituted so that manuscript conveyance actuation may not be performed at all.

[0029] In addition, while the manuscript of A3 size is horizontal *****, namely, being laid on the manuscript base 12 mentioned above in the condition of having made the longitudinal direction of the manuscript of A3 size in agreement with the longitudinal direction of platen glass PG A2 size which is twice the size of the manuscript of this A3 size ("large-sized size" is called hereafter.) A manuscript is longitudinal state, namely, it is constituted so that it may be laid in the condition of having made the longitudinal direction of the manuscript of large-sized size going to the longitudinal direction of platen glass PG direct. In addition, the manuscript below A3 size as a manuscript which the manuscript below A3 size is laid on this manuscript base 12, and is laid on this manuscript base 12 in the following explanation will be called the manuscript of "being usually size."

[0030] In this 1st example, moreover, a manuscript [finishing / a reading scan] When the size is usually size, in the condition of having been reversed, with the fetch actuation from platen glass PG Paper is delivered on the delivery base 16 specified on the top face of the body 14 of equipment of the automatic manuscript feed gear 10, and when the size is

large-sized size With the fetch actuation from platen glass PG, it is taken out in the shape of a straight, and it is constituted so that paper may be delivered to the near side (namely, actuated-valve-position side) of the body 14 of equipment from the 1st delivery opening 18 formed in the front face of a body 14.

[0031] [Detail explanation of the configuration of the automatic manuscript feed gear 10]

{explanation of the body 14 of equipment} -- as shown in drawing 3, while this automatic manuscript feed gear 10 is attached through the hinge which is not illustrated on the top-face back-end edge of a copying machine DC -- the top-face whole of a copying machine DC -- a wrap -- it has the body 14 of equipment constituted so that things might be made as sheathing covering, and the crevice 20 where the right-and-left side edge was opened wide, respectively is formed in the center section of this body 14 of equipment. That is, both front partial 14F and back partial 14R of this body 14 of equipment are formed in the condition of having projected more nearly up than a central part (namely, base of a crevice 20). Moreover, the part which contains the conveyance belt which mentions the inferior surface of tongue of this body 14 of equipment later is opened wide.

[0032] While the manuscript incorporation opening 22 is formed, the manuscript base 12 mentioned above is attached in the transverse plane of back partial (part for namely, drawing Nakamigi flank) 14R of this body 14 of equipment free [attachment and detachment] in the condition that it was open for free passage to this manuscript incorporation opening 22. In the installation condition, this manuscript base 12 is set up so that the bottom of drawing Nakamigi may be in the inclination condition of **. And the delivery base 16 where paper is delivered to the manuscript of usual size [finishing / a copy] is specified in the top face of the crevice 20 mentioned above. Moreover, the 2nd delivery opening 24 (shown in drawing 2) with which paper is delivered to a large-sized manuscript [finishing / a copy] where the delivery base 16 is attended is formed in the rear face of front partial 14F of this body 14 of equipment.

[0033] On the other hand in {explanation of conveyance device 26} body 14 of equipment mentioned above, the conveyance device 26 for carrying out taking-in conveyance of the image of the manuscript laid on the feed base 12 on platen glass PL is contained. Below, the configuration of this conveyance device 26 is explained.

[0034] This conveyance device 26 was arranged in back partial 14R of the body 14 of equipment in the condition of having projected up more slightly than a conveyance way while being located behind the feed base 12, and is equipped with the stopper member 28 for the tip of the manuscript laid on the feed base 12 contacting, and holding in that location. Moreover, between this stopper member 28 and the point of the feed base 12, the pickup roller 30 for carrying out the sequential pickup of the manuscript on the manuscript base 12 from the bottom according to rotation is arranged.

[0035] And behind this stopper member 28, the separation mechanism 32 for dividing into one sheet at a time the manuscript taken up with the pickup roller 30 is arranged. This separation mechanism 32 consists of separation roller 32A arranged down the conveyance way, and separation pad 32A which it is arranged above the conveyance way and carries out a pressure welding to separation roller 32A by predetermined thrust in this example.

[0036] On the other hand, the conveyance belt 36 by which endless transit is carried out is arranged by the lower part of the body 14 of equipment in the condition of the pressure welding having been carried out to platen glass PG, and having extended from front partial 14F to back partial 14R. In this example, in the shape of [so-called] Caterpillar, this conveyance belt 36 is constituted so that the inferior surface of tongue of that front end and the back end may incline at a predetermined include angle to platen glass PG.

[0037] Moreover, in back partial 14R of the body 14 of equipment, the reversal conveyance way 38 for leading the manuscript separated by the separation mechanism 32 between the back parts between the conveyance belt 36 and platen glass PG (a part for a drawing Nakamigi flank), where a front flesh side is reversed is arranged. This reversal conveyance way 38 curves gently, and is specified from the reversal guide members 38A and 38B of the pair estranged mutually. Resist (namely, in order to prevent skew) roller pair 40 for taking resist of manuscript in the middle of conveyance A and 40B are interposed in the halfway section of this reversal conveyance way 38.

[0038] In addition, the pickup roller 30 mentioned above, separation roller 32A, the conveyance belt 36, and one resist roller 40A are received through the driving force transfer device in which driving force of the conveyance motor 42 shown in drawing 5 is not illustrated, and they are constituted so that a rotation drive may be carried out under control of a control unit 44, respectively.

[0039] Since the conveyance device 26 is constituted, thus, the manuscript laid on the manuscript base 12 It is back incorporated with rotation of a pickup roller 30, and a separation mechanism 32 separates into one sheet at a time. Where it was conveyed where a front flesh side is reversed by the reversal conveyance way 38, and a skew is taken by resist roller pair 38A and 38B It will enter from back between the conveyance belt 36 and platen glass PG, the image reading field top of platen glass PG will be conveyed according to transit of the clockwise rotation in drawing of the conveyance belt 36, and it will be conveyed to a predetermined image reading station.

[0040] In {explanation of gate member 46} one side, and the lower part of front partial 14F of the body 14 of equipment The manuscript of the usual size which was located on the image reading field of platen glass PG, and the reading scan ended in the condition of having been located in the near side of the conveyance belt 36 mentioned above The 1st location to which paper is made to deliver on the delivery base 16 through the 2nd delivery opening 24 mentioned above with the transit drive of the clockwise rotation in drawing of the conveyance belt 36 (location shown in drawing 3), The manuscript of the large-sized size which was located on the image reading field of platen glass PG, and the reading scan for the first portion ended With the transit drive of the clockwise rotation in drawing of the conveyance belt 36, between the 2nd location (location shown in drawing 4) conveyed to a near side through the 1st delivery opening 18 mentioned above, the gate member 46 by which a rotation drive is carried out changes, and it is arranged as a means.

[0041] the electromagnetism which does not illustrate this gate member 46 -- it is constituted so that a rotation drive may be carried out between the 1st location and the 2nd location which mentioned the solenoid above as a driving source, and this drive timing is controlled by the control unit 44 mentioned above.

[0042] Here, in this example, the gate member 46 is in the condition in the 1st location, and that tip enters in the crevice RE formed in the direct near side of the platen glass PG of the top face of a copying machine DC, and it is set up so that the manuscript of usual size conveyed by the near side can be dipped up out of on platen glass PG with transit of the conveyance belt 36. In addition, with rotation of the delivery roller 48, the manuscript of the dipped-up usual size will pass along the delivery conveyance way 50, and will be taken out out of the body 14 of equipment through the 2nd delivery opening 24, and paper will be delivered to it on the delivery base 16.

[0043] It is in the condition which the gate member 46 has in the 2nd location on the other hand, and while the tip estranges from the top face of a copying machine DC to the upper part, the conveyance belt 36 is contacted, and the manuscript of large-sized size conveyed by the near side with transit of the conveyance belt 36 from on platen glass PG passes the lower part as it is, and it is set up so that it may permit facing to the 1st delivery opening 18.

[0044] In this 1st example, by namely, the conveyance belt 36, the gate member 46 in the 1st location, the delivery roller 48, and the delivery conveyance way 50 Usually, the 1st delivery device (means) for delivering paper to the manuscript of size will be specified, and the 2nd delivery device (means) for delivering paper to the manuscript of large-sized size will be prescribed by the conveyance belt 36 and the gate member 46 in the 2nd location.

[0045] In addition, although the conveyance belt 36 will carry out a transit drive further clockwise and delivery actuation of the manuscript of large-sized size will be performed after the image reading scan of the second half part of the manuscript of large-sized size is completed, it can receive in paper output tray DT attached in the front face of a copying machine DC with this delivery actuation. This paper output tray DT is attached in the front face of a copying machine DC free [attachment and detachment] so that it may not usually become obstructive at the time of the copy of the manuscript of size.

[0046] In addition, in this 1st example, it is also good not to prepare this paper output tray DT, without being limited to preparing paper output tray DT for receiving the manuscript of large-sized size at the time of delivery. In this case, where the back end of this is pinched between the conveyance belt 36 and platen glass PG at the time of the delivery of the manuscript of large-sized size, [for example,] By suspending transit of the conveyance belt 36, the manuscript of large-sized size falls from the 1st delivery opening 18. When it will be prevented, and the back end of the manuscript of large-sized size falls out from between the conveyance belt 36 and platen glass PG and falling above the floor level comes out The 1st location can be made to be able to carry out return rotation of the gate member 46 mentioned above, and the fall from the 1st delivery opening 18 of the manuscript of the large-sized size which pinched the back end of the manuscript of large-sized size between this and the top face of a copying machine DC, and was delivered to it can be prevented.

[0047] [explanation of the automatic manuscript delivery approach] -- delivery actuation of the manuscript in the automatic manuscript feed gear 10 constituted as mentioned above is explained according to the size of a manuscript.

[0048] {-- in the condition that ** (not shown) which was usually installed on the control panel CP of explanation} copying machine DC of delivery actuation of the manuscript of size and which directs delivery of a large-sized manuscript, for example is not pushed, delivery actuation of the manuscript of size is usually shown -- a manuscript delivery control signal (usually size information) is usually sent to the control unit 44 of the automatic manuscript feed gear 10 from control unit CU by the side of a copying machine DC (shown in drawing 5). the condition that, as for this control unit 44, the manuscript delivery control signal is usually inputted -- it is -- electromagnetism -- it maintains in the condition [having demagnetized the solenoid], and as shown in drawing 3 , the gate member 46 is held in the 1st location.

[0049] Then, when copy initiation (or activation) ** installed on the control panel CP of a copying machine DC pushes in and drives Control unit CU by the side of a copying machine DC outputs a manuscript delivery start signal, and in

response to this manuscript delivery start signal, the control unit 44 by the side of the automatic manuscript feed gear 10 carries out drive control of the conveyance device 26, as mentioned above. Only one manuscript of the usual size on the manuscript base 12 is conveyed on the image reading field of platen glass PG. If this thing [that the manuscript of size was usually conveyed by the position on the image reading field of platen glass PG] is detected, a control unit 44 will output a reading scan enabling signal to control unit CU by the side of a copying machine DC. This control unit CU performs predetermined copy actuation in response to this reading scan enabling signal, and copies the image of a manuscript on the form of predetermined size. And control unit CU outputs the completion signal of a reading scan to the control unit 44 by the side of the automatic manuscript feed gear 10 with termination of a reading scan of a manuscript.

[0050] And this control unit 44 drives the 1st delivery device mentioned above in response to the completion signal of a reading scan, delivers paper to the manuscript on platen glass PG on the delivery base 16, and ends a series of manuscript delivery actuation.

[0051] If ** (not shown) which directs {explanation of delivery actuation of manuscript of large-sized size} one side and delivery of the large-sized manuscript mentioned above is pushed in, control unit CU by the side of a copying machine DC will output the large-sized manuscript delivery control signal (large-sized size information) which shows delivery actuation of the manuscript of large-sized size to the control unit 44 of the automatic manuscript feed gear 10. this control unit 44 -- the input of a large-sized manuscript delivery control signal -- following -- electromagnetism -- a solenoid is excited, and as shown in drawing 4, the gate member 46 is moved to the 2nd location. In addition, in the following explanation, it shall be set up so that the manuscript (namely, manuscript of A2 size) of large-sized size may be made to copy on the form of A3 size. That is, in a copying machine DC, 70% of copy reduction percentage shall be set up.

[0052] Then, with the input of the manuscript delivery start signal mentioned above from control unit CU by the side of a copying machine DC, the control unit 44 by the side of the automatic manuscript feed gear 10 carries out drive control of the conveyance device 26, as mentioned above, and it conveys the manuscript of the large-sized size on the manuscript base 12 on the image reading field of platen glass PG. If what a part for the first portion of the manuscript of this large-sized size was conveyed for by the position on the image reading field of platen glass PG is detected, a control unit 44 will output the 1st reading scan enabling signal to control unit CU by the side of a copying machine DC. This control unit CU once memorizes the reading image information for the first portion of this large-sized manuscript in the memory section which does not perform and illustrate a reading scan in response to this 1st reading scan enabling signal.

[0053] And control unit CU outputs the 1st completion signal of a reading scan to the control unit 44 by the side of the automatic manuscript feed gear 10 with termination of the reading scan for the first portion of the manuscript of large-sized size. This control unit 44 carries out drive control of the conveyance device 26 mentioned above again in response to the 1st completion signal of a reading scan, and conveys the manuscript of large-sized size to a near side further. If what the second half part of the manuscript of this large-sized size was conveyed for by the position on the image reading field of platen glass PG is detected, a control unit 44 will output the 2nd reading scan enabling signal to control unit CU by the side of a copying machine DC. This control unit CU once memorizes the reading image information of the second half part of this large-sized manuscript in the memory section which does not perform and illustrate a reading scan in response to this 2nd reading scan enabling signal.

[0054] And control unit CU compounds the reading image information of a part the reading image information for the first portion of the manuscript of large-sized size, and the second half, and is made to copy it on the form of A3 size in the condition of having reduced to 70%. Moreover, control unit CU outputs the 2nd completion signal of a reading scan to the control unit 44 by the side of the automatic manuscript feed gear 10 with termination of a reading scan of the second half part of the manuscript of large-sized size. This control unit 44 drives the 2nd delivery device mentioned above in response to the 2nd completion signal of a reading scan, delivers paper to the manuscript on platen glass PG on paper output tray DT, and ends a series of manuscript delivery actuation.

[0055] Thus, the copy size which is specified in the area of platen glass PG according to the automatic manuscript feed gear 10 of this one example The manuscript of the large-sized size which has (for example, size) (for example, A2 size) twice the size of A3 Since a part for the first portion of this is first conveyed on the image reading field of platen glass PG, next it can be automatically conveyed as the second half part of this is conveyed on the image reading field of platen glass PG After carrying out the reading scan of each image one by one, it can permit copying automatically in the condition of having compounded on one sheet of form, and the workability will improve extremely as compared with having set the large-sized manuscript on the image reading field of platen glass PG by the conventional handicraft.

[0056]

[Explanation of other examples] It cannot be overemphasized that this invention is variously deformable in the range which does not deviate from the summary of this invention, without being limited to the configuration of the 1st example mentioned above. Below, the configuration and actuation of an automatic manuscript feed gear concerning the 2nd example and 3rd example of this invention are explained. In addition, in the following explanation, about the same part as the 1st example mentioned above, the same sign is attached and the explanation is omitted.

[0057]

[Explanation of the 2nd example] First, the configuration of the 2nd example of the automatic manuscript feed gear concerning this invention is explained with reference to drawing 6 thru/or drawing 12 of an accompanying drawing.

[0058] In automatic manuscript feed gear 10' of this 2nd example As compared with the configuration of the automatic manuscript feed gear 10 of the 1st example mentioned above, the manuscript which (1) manuscript base 12 is attached in the back side face which is front partial 14F of the body 14 of equipment, and was laid here After being incorporated by the near side, on :(2) manuscript base 12 conveyed on the image reading field of platen glass PG, once Only the manuscript of size is laid. Usually, the manuscript of large-sized size Although conveyed with transit of only the counterclockwise rotation in drawing of the conveyance belt 36 only in the one direction of the counterclockwise rotation in drawing also at both the times of the time of manuscript taking in, and manuscript delivery, the manuscript of usual size laid in :(3) manuscript base 12 by which manual bypass insertion is carried out from the 1st delivery opening 18 and manual bypass insertion opening of combination Although the manuscript of the large-sized size by which manual bypass insertion was carried out is conveyed on the image reading field of platen glass PG with transit of the counterclockwise rotation in drawing of the conveyance belt 36 at the time of manuscript taking in from the manual bypass insertion opening 18 At the time of manuscript delivery, paper is delivered from the 1st delivery opening 18 with transit of the clockwise rotation in drawing of the conveyance belt 36. That is, the conveyance motors 42 which carry out the transit drive of the conveyance belt 36 differ greatly in three points the above of : constituted possible [a good inversion].

[0059] By automatic manuscript feed gear 10' of this 2nd example, as shown at drawing 6 , symmetrically [the automatic manuscript feed gear 10 of the 1st example mentioned above], the manuscript incorporation opening 22 is formed in the rear face of front partial 14F of the body 14 of equipment by the detail, and the 2nd delivery opening 24 is formed in the front face of back partial 14R of the body 14 of equipment at it.

[0060] Where the method of right above of the 1st delivery opening 18 mentioned above is connected [drawing 7] on the other hand at this so that it may be shown, the manual bypass insertion opening 52 is formed, and this manual bypass insertion opening 52 is blockaded by the covering member 54 possible [disconnection]. That is, this covering member 54 is supported to revolve with that lower limit free [rotation], and by rotating a near side, as shown in drawing 8 , the manual bypass insertion opening 52 is made as [open / wide].

[0061] the pickup roller 56 for incorporating the manuscript of the large-sized size by which manual bypass was carried out, and the pressure-welding roller 58 which **** to this arrange in a way among this manual bypass insertion opening 52 -- having -- **** -- these roller pair -- between the outlet of ***** of 56 and 58, and the lower part of the reversal conveyance way 38 mentioned above, the manual bypass carrying-in way 60 is interposed.

[0062] While this manual bypass carrying-in way 60 is connected [lower part / of guide member 38B of the outside of the reversal conveyance way 38 / edge / of the formed free passage hole / upper limit] by bottom guide member it is connected [bottom] 60A, and the lower limit edge of this free passage hole here The manuscript consists of bottom guide member 60B arranged in the condition of estranging only sufficient distance inserting in, respectively from the top face of bottom guide member 60A and the body CB of a copying machine. In addition, the manual bypass taking-out way 62 where the manuscript of large-sized size [finishing / a copy] is taken out from between bottom guide member 60B and the top faces of the body CB of a copying machine is specified.

[0063] in addition , the manuscript be carry out termination of the lower limit of guide member 38B of the outside which specify the reversal conveyance way 38 to the method of the edge of platen glass PG of right above , where sufficient gap to pass be have and estrange , and in case paper be deliver to the manuscript of the large-sized size which the manuscript reading scan ended , the near side edge of this manuscript constitute so that it may enter certainly between this guide member 38B and the top face of the body CB of a copying machine .

[0064] moreover, the roller pair mentioned above -- the detection sensor 64 which detects that the manuscript was inserted in the manual bypass insertion opening 52 is arranged just before 56 and 58. Although this detection sensor 64 is not illustrated for details, it consists of well-known photo interrupters, a manuscript is inserted between the light emitting device of a pair, and a photo detector, and it is constituted by intercepting between both optically so that a manual bypass manuscript insertion signal may be outputted to control unit CU by the side of a copying machine DC.

[0065] Here, in this 2nd example, it is prepared as a distinction means by which the detection sensor 64 distinguishes

manuscript size. That is, control unit CU by the side of a copying machine DC receives the manual bypass manuscript insertion signal from the detection sensor 64 as large-sized size information, and in the condition that this manual bypass manuscript insertion signal is inputted, it is set up so that the size of the manuscript conveyed by automatic manuscript feed gear 10' may be recognized as large-sized size. On the other hand, this control unit CU judges it as what has usually received size information from the detection sensor 64 in the condition that the manual bypass manuscript insertion signal is not outputted, and it is set up so that the size of the manuscript conveyed by automatic manuscript feed gear 10' may usually be recognized as size.

[0066] [explanation of the automatic manuscript delivery approach of the 2nd example] -- delivery actuation of the manuscript in automatic manuscript feed gear 10' constituted as mentioned above is explained according to the size of a manuscript.

[0067] {-- usually -- explanation} of delivery actuation of the manuscript of size -- in this condition that usually shows delivery actuation of the manuscript of size in drawing 7, except for the point that the transit direction of the conveyance belt 36 is opposite, since it is the same, explanation here is abbreviated to delivery actuation of the manuscript in the 1st example mentioned above.

[0068] In the condition of having rotated {explanation of delivery actuation of manuscript of large-sized size} one side, and the covering member 54 as shown in drawing 8, and having made the manual bypass insertion opening 52 opening wide If the rotated top face of the covering member 54 is made a guide, manual bypass insertion of the manuscript of large-sized size is carried out at the manual bypass insertion opening 52 and the detection sensor 64 outputs a manual bypass manuscript insertion signal Control unit CU by the side of a copying machine DC outputs the large-sized manuscript delivery control signal (large-sized size information) which shows delivery actuation of the manuscript of large-sized size to the control unit 44 of automatic manuscript feed gear 10' after predetermined time progress, for example, progress of about 2 - 3 seconds. This control unit 44 carries out the rotation drive of the pickup roller 56 with the input of a large-sized manuscript delivery control signal. In addition, in the following explanation, like the case of the 1st example, it shall be set up so that the manuscript of large-sized size may be made to copy on the form of A3 size. That is, in a copying machine DC, 70% of copy reduction percentage shall be set up.

[0069] Moreover, the control unit 44 by the side of automatic manuscript feed gear 10' carries out drive control of the conveyance device 26, as mentioned above, and carries out the transit drive of the conveyance belt 36 at the counterclockwise rotation in drawing while it starts the rotation drive of a pickup roller 56. Thus, the large-sized manuscript by which manual bypass insertion was carried out is conveyed by the manual bypass insertion opening 52 towards the backside with rotation of a pickup roller 56 and transit of the conveyance belt 36.

[0070] If what a part for the first portion of the manuscript of this large-sized size was conveyed for by the position on the image reading field of platen glass PG is detected, a control unit 44 will output the 1st reading scan enabling signal to control unit CU by the side of a copying machine DC. This control unit CU once memorizes the reading image information for the first portion of this large-sized manuscript in the memory section which does not perform and illustrate a reading scan in response to this 1st reading scan enabling signal.

[0071] And control unit CU outputs the 1st completion signal of a reading scan to the control unit 44 by the side of the automatic manuscript feed gear 10 with termination of the reading scan for the first portion of the manuscript of large-sized size. This control unit 44 carries out drive control of the conveyance device 26 mentioned above again in response to the 1st completion signal of a reading scan, and the manuscript of large-sized size is further turned to the backside, and it conveys it. In this condition, a part for the first portion of the manuscript of large-sized size will be temporarily discharged on the delivery base 16 through the 2nd delivery opening 24.

[0072] If what the second half part of the manuscript of this large-sized size was conveyed for by the position on the image reading field of platen glass PG is detected, a control unit 44 will output the 2nd reading scan enabling signal to control unit CU by the side of a copying machine DC. This control unit CU once memorizes the reading image information of the second half part of the manuscript of this large-sized size in the memory section which does not perform and illustrate a reading scan in response to this 2nd reading scan enabling signal.

[0073] And control unit CU compounds the reading image information of a part the reading image information for the first portion of the manuscript of large-sized size, and the second half, and is made to copy it on the form of A3 size in the condition of having reduced to 70%. Moreover, control unit CU outputs the 2nd completion signal of a reading scan to the control unit 44 by the side of the automatic manuscript feed gear 10 with termination of a reading scan of the second half part of the manuscript of large-sized size. In response to the 2nd completion signal of a reading scan, this control unit 44 carries out the transit drive of the conveyance belt 36 clockwise among drawing shortly, passes along the manual bypass taking-out way 62, delivers paper to the manuscript on platen glass PG out of the body 14 of equipment through the 1st delivery opening 18, and ends a series of manuscript delivery actuation.

[0074] In addition, without discharging on paper output tray DT which was able to attach in the transverse plane of the body CB of a copying machine the manuscript of the large-sized size to which paper was delivered free [attachment and detachment] like the 1st example in this 2nd example and preparing this paper output tray DT For example, at the time of the delivery of the manuscript of large-sized size, where the back end of this is pinched between the conveyance belt 36 and platen glass PG, by suspending transit of the conveyance belt 36, the manuscript of large-sized size may fall from the 1st delivery opening 18, may fall above the floor level, and may constitute by the contents.

[0075] Thus, according to automatic manuscript feed gear 10' of this 2nd example, where it conveyed the manuscript of large-sized size automatically and this is divided into two in a copying machine DC like the case of the 1st example, can copy, but Although there is constraint which must carry out manual bypass insertion of the manuscript of large-sized size as compared with the case of the 1st example, since it is rare to copy two or more large-sized manuscripts like A2 size at once generally, it cannot be said that it is the constraint which has a problem. The manuscript of size can both also set the manuscript of large-sized size by the near side as compared with the 1st example, and can on the contrary usually do so the effectiveness that the workability of a manuscript set improves.

[0076] In the 2nd example which carried out [explanation of 1st modification of 2nd example] ****, although it explained that the manual bypass insertion opening 52 with which manual bypass insertion of the manuscript of large-sized size is carried out, and the 1st delivery opening 18 with which paper is delivered to the manuscript of large-sized size [finishing / an image reading scan] were formed separately, this example can also prepare both in the common condition, without being limited to such a configuration.

[0077] Below, the configuration of the 1st modification which formed the manual bypass insertion opening 52 and the 1st delivery opening 18 in common is explained with reference to drawing 9 thru/or drawing 11 of an accompanying drawing. In addition, in the following explanation, the same sign is given to the same part as the 1st example and the 2nd example which were mentioned above, and the explanation is omitted into it.

[0078] In this 1st modification, the manual bypass opening 66 with which the manual bypass insertion opening 52 and the 1st delivery opening 18 in the 2nd example mentioned above were communalized is formed, and it is blockaded by the covering member 54 possible [disconnection] like the 2nd example. Moreover, since the manuscript of large-sized size will be discharged through here, the manual bypass carrying-in way 60 mentioned above will be specified as a manual bypass conveyance way 60 in this 1st modification.

[0079] On the other hand, termination of the guide member 38B of the outside which specifies the external surface of the reversal conveyance way 38 is carried out depending on the method of right above of the stopper plate ST which omitted that explanation in the 2nd example mentioned above, and bottom guide member 60A which specifies the top face of the manual bypass conveyance way 60 to this edge is connected.

[0080] In addition, as this stopper plate ST is shown in drawing 9 , while that back end projects up more slightly than platen glass PG As it is indicated in drawing 11 as the 1st rocking location where the front end fell caudad rather than bottom guide member 60B, while the back end falls caudad from platen glass PG The front end is attached in the top face of the body CB of a copying machine free [rocking] between bottom guide member 60B and the 2nd rocking location made by abbreviation flush. The rocking drive of this stopper plate ST may be made to be carried out by the driving source which the rocking drive could be carried out by the driving source prepared in the body CB side of a copying machine, and was prepared in the automatic manuscript feed gear 10' side.

[0081] Moreover, the same gate member 46 is arranged in the unification section of the reversal conveyance way 38 and the manual bypass conveyance way 60 which were mentioned above with having used in the first example mentioned above. That is, this gate member 46 is supported to revolve free [rotation] between the 1st location which opens the reversal conveyance way 38 wide and blockades the manual bypass conveyance way 60, and the 2nd location which blockades the reversal conveyance way 38 and opens the manual bypass conveyance way 60 as shown in drawing 10 and drawing 11 , as shown in drawing 9 .

[0082] Thus, in the 1st modification of automatic manuscript feed gear 10' of the 2nd example constituted, when usually conveying the manuscript of size, as shown in drawing 9 , while the gate member 46 is brought to the 1st location, the stopper plate ST is brought to the 1st rocking location. Consequently, the manuscript of usual size laid in the manuscript base 12 will be conveyed on the image reading field of platen glass PG through the reversal conveyance way 38.

[0083] On the other hand, when manual bypass of the manuscript of large-sized size is carried out, as shown in drawing 10 , the stopper plate ST is in the condition held in the 1st rocking location, and the rotation drive of the gate member 46 is carried out in the 2nd location. By this, the manuscript of the large-sized size by which manual bypass insertion was carried out through the manual bypass opening 66 will be conveyed on the image reading field of platen glass PG through the manual bypass conveyance way 60 with rotation of a pickup roller 56 like the case of the 2nd example mentioned above.

[0084] Moreover, in case the manuscript of the large-sized size which the reading scan of the manuscript image of a part ended the second half is discharged on the image reading field of platen glass PG, as shown in drawing 11, the gate member 46 is in a condition [being held in the 2nd location], and the rocking drive of the stopper plate ST is carried out shortly in the 2nd rocking location. By this, according to the transit drive of the clockwise rotation in drawing of the conveyance belt 36, the top face of the stopper plate ST will be guided to the manuscript of the large-sized size on platen glass PG, a near side will convey the manual bypass conveyance way 60, and paper will be delivered to it from the manual bypass opening 66.

[0085] In [explanation of the 2nd modification of the 2nd example], and the 2nd example mentioned above the pickup roller pair for incorporating resist roller pair 40A for [which usually takes the skew of the manuscript of size] having been incorporated from the manuscript base 12, 40B, and the manuscript of the large-sized size by which manual bypass insertion was carried out, although it explained that it had 56 and 58 separately Without being limited to such a configuration, where both are communalized, it can have this example.

[0086] Below, the configuration at the time of communalizing both is explained as the 2nd modification of the 2nd example with reference to drawing 12.

[0087] That is, in this 2nd modification, as shown in drawing 12, the manual bypass insertion opening 54 is formed more nearly up than the arrangement location of resist roller pair 40A and 40B. And bottom guide member 60A of the manual bypass carrying-in way 60 as for which the end face section carried out opening to the manual bypass insertion opening 54 is connected [edge / of the formed free passage hole / upper limit], and bottom guide member 60B is connected [method / of right above / of resist roller pair 40A of guide member 38B of the outside of the reversal conveyance way 38, and 40B] by the lower limit edge of this free passage hole. In addition, the manual bypass taking-out way 62 is specified between guide member it was connected [guide / lower limit / of outside guide member 38B of the reversal conveyance way 38] 62A, and the top face of the body CB of a copying machine.

[0088] in addition, in the unification section of the manual bypass carrying-in way 60 and the reversal conveyance way 38 While forbidding the manuscript which blockades the free passage hole formed in the reversal conveyance way 38, and is conveyed from the reversal conveyance way 38 from always entering the manual bypass carrying-in way 60 The 1st [which can be opened with the manuscript which has the manual bypass carrying-in way 60 conveyed] gate sheet 68 formed, for example from the Mylar sheet is arranged. moreover, in the unification section of the manual bypass taking-out way 62 and the reversal conveyance way 38 While forbidding the manuscript which blockades the reversal conveyance way 38 and is discharged from platen glass PG from always entering the reversal conveyance way 38 The 2nd [which can be opened with the manuscript which has this reversal conveyance way 38 conveyed] gate sheet 70 formed, for example from the Mylar sheet is arranged.

[0089] Thus, while being able to do so the same effectiveness as the 2nd example mentioned above by constituting the 2nd example as shown in the 2nd modification, it can be managed even if it does not arrange the pressure-welding roller 58 which **** to a pickup roller 56 and this, and the configuration will be simplified, and cheap-ization of cost can be attained.

[0090] Although it explained that the manuscript base 12 was attached in [explanation of the 3rd modification of the 2nd example], and the 2nd example mentioned above in the condition of having fixed to front partial 14F of the body 14 of equipment Without being limited to such a configuration, free [rotation into the front part of the body 14 of equipment], according to closing motion of attachment and this body 14 of equipment, this example so that the manuscript laid on this manuscript base 12 may not fall You may constitute so that an abbreviation level condition may be maintained, and a rotation drive may be relatively carried out to front partial 14F.

[0091] Below, the configuration at the time of making the manuscript base 12 movable is explained as the 3rd modification of the 2nd example with reference to drawing 13 and drawing 14.

[0092] That is, in this 3rd modification, the manuscript base 12 is supported to revolve by front partial 14F of the body 14 of equipment free [rotation] through a pivot 72 in that front edge. And from the 1 side of the end face section (front edge) of this manuscript base 12, it is attached in one so that the piece 74 of connection may extend aslant in a front lower part. On the other hand, the body 14 of equipment is supported to revolve by the back edge of the top face of the body CB of a copying machine free [rotation] through the pivot 76 in the back end section.

[0093] Here, the location (Sign X shows) where only predetermined distance was offset from this pivot 76, and the tip location (Sign Y shows) of the piece 74 of connection mentioned above are mutually connected so that only a fixed distance may always be estranged with the connection rod 78. In addition, in the condition that the body 14 of equipment is in the lock out location located on platen glass PG, as shown in drawing 14, the die length of this connection rod 78 is set up so that the inclination condition which the tip (front edge) biased up a little may be maintained.

[0094] Thus, since the automatic manuscript feed gear of this 3rd modification is constituted, when the paper jam of a manuscript etc. arises, for example during the manuscript delivery actuation in this automatic manuscript feed gear, this body 14 of equipment is opened wide and it makes it rotate to an open position, the manuscript base 12 will rotate relatively to front partial 14F of the body 14 of equipment, and an abbreviation level condition will be maintained. Consequently, even if it rotates this body 14 of equipment from a lock out location to an open position in the condition [that a manuscript is laid on the manuscript base 12], the manuscript on the manuscript base 12 will continue being laid on this manuscript base 12 in the condition of having been stabilized, without falling from here.

[0095]

[Explanation of the 3rd example] Next, the configuration of the 3rd example of the automatic manuscript feed gear concerning this invention is explained with reference to drawing 15 and drawing 16 of an accompanying drawing.

[0096] In 10" of automatic manuscript feed gears of this 3rd example As compared with the configuration of the automatic manuscript feed gear 10 of the 1st example mentioned above, the manuscript which (1) manuscript base 12 is attached in front partial 14F of the body 14 of equipment, and was laid here :(2) manuscript base 12 conveyed on the image reading field of platen glass PG after being incorporated in front partial 14F is once supported to revolve free [migration] between the back location located above the body 14 of equipment, and the front location which projects ahead of the body 14 of equipment. On the manuscript base 12 in a back location, the manuscript of size is usually laid, :(3) delivery base 16 in which the manuscript of large-sized size is laid is formed movable on the manuscript base 12 in a front location, and it is supported to revolve free [rotation] between the lower part location which carries out abbreviation adhesion on the top face of the body 14 of equipment, and the rise location which were raised above this top face. Usually, in case the delivery base 16 is held in a lower part location in case the manuscript of size is discharged, and the manuscript of large-sized size is discharged, the delivery bases 16 differ greatly in three points the above of : brought to an upper part location.

[0097] By 10" of automatic manuscript feed gears of this 3rd example, as shown at drawing 15 , in a detail, the manuscript incorporation openings 22 for the manuscripts of size differ in the automatic manuscript feed gear 10 of the 1st example mentioned above, and are usually formed in the rear face of front partial 14F of the body 14 of equipment like automatic manuscript feed gear 10' of the 2nd example at it. Moreover, unlike the 2nd example, the manual bypass insertion opening 52 for carrying out manual bypass insertion of the manuscript of large-sized size is formed in the rear face of front partial 14F.

[0098] In addition, in this 3rd example, the 2nd delivery opening 24 is usually specified as common delivery opening of the manuscript of size, and the manuscript of large-sized size, and is formed in the front face of back partial 14R of the body 14 of equipment. That is, the 1st delivery opening 18 is not formed in this 3rd example.

[0099] On the other hand, as shown in drawing 16 , the manuscript base 12 mentioned above is attached in front partial 14F of the body 14 of equipment free [migration], and is supported to revolve by the detail free [rotation] between the back location located above the body 14 of equipment, and the front location which projects ahead of the body 14 of equipment. Here, on the portable type manuscript base 12 (sign 12A shows drawing 16) in a back location, the manuscript of size is usually laid, and it is set up by the appearance in which the manuscript of large-sized size is laid on the portable type manuscript base 12 (sign 12B shows drawing 16) in a front location. In addition, the manuscript of size is usually laid on the portable type manuscript base 12 in a front location, and it may be made to carry out manual bypass insertion of this.

[0100] Moreover, in this 3rd example, the manual bypass carrying-in way 60 is interposed between the method parts of right above of resist roller pair 40A of the reversal conveyance way 38, and 40B, and the manual bypass insertion opening 52 mentioned above. The pressure-welding roller 58 which **** to a pickup roller 56 and this is arranged in the halfway section of this manual bypass carrying-in way 60 like the 2nd example. In addition, the free passage hole formed in the reversal conveyance way 38 is always blockaded, and while forbidding that the manuscript conveyed from the manual bypass carrying-in way 60 enters the reversal conveyance way 38, the gate sheet 80 it can open by the manuscript which has the reversal conveyance way 38 conveyed and which was formed, for example from the Mylar sheet is arranged in the unification section of the manual bypass carrying-in way 60 and the reversal conveyance way 38.

[0101] Here, in this 3rd example, as mentioned above, the delivery base 16 is formed movable, and the front end of this movable delivery base 16 is supported to revolve by the end face section of back partial 14R so that it can rotate freely between the lower part location which carries out abbreviation adhesion on the top face of the body 14 of equipment, and the rise location raised above this top face. Under this movable delivery base 16, the rotation device 74 for carrying out the rotation drive of this between a lower part location and a rise location is arranged. While being supported to revolve by the top face of the body 14 of equipment free [rotation], this rotation device 82 a drive motor 84, the drive

gear 86 fixed to the motor shaft of this drive motor 84, and the end face section It is attached at the tip of the rotation lever 90 by which the follower gear 88 which gears with the drive gear 86 was fixed to this end face section, and this rotation lever 90 free [rotation], and it has the Oshiage roller 92 which **** on the inferior surface of tongue of the movable delivery base 16, and is constituted.

[0102] If detected by the 1st detection sensor which will not be illustrated if this rotation device 82 is constituted so that drive control may be carried out under control of the control unit 44 mentioned above, and the portable type manuscript base 12 is located in a back location Namely, in case the manuscript of size is usually discharged, a control unit 44 carries out drive control of the drive motor 84. In case the manuscript of large-sized size will be discharged if detected by the 2nd detection sensor which will not be illustrated if the movable delivery base 16 is brought to a lower part location and the portable type manuscript base 12 is located in a front location namely, drive control of the drive motor 84 is carried out, and it controls to bring the movable delivery base 16 to an upper part location.

[0103] In addition, as the rise location of the movable delivery base 16 mentioned above is shown in drawing 16 , the tip of the movable delivery base 16 pushed up by this is set up so that it may be located more nearly up than the manuscript taking-in opening 22 formed in front partial 14F of the body 14 of equipment. It will be prevented certainly that the manuscript of the large-sized size discharged from the delivery opening 24 will be again incorporated in front partial 14F from the manuscript taking-in opening 22 by this.

[0104] On the other hand, since the portable type manuscript base 12 is located in a back location and the movable delivery base 16 is located in a lower part location in case the manuscript of size is usually discharged, the manuscript discharged will enter between this portable type manuscript base 12 and the movable delivery base 16, and paper will be certainly delivered to it on the movable delivery base 16 in a lower part location by this.

[0105] Thus, while being able to do so the effectiveness in the 2nd example mentioned above by constituting 10" of automatic manuscript feed gears of the 3rd example, and the same effectiveness, unlike the 2nd example, the manuscript of large-sized size can be discharged on the delivery base 16. Moreover, it is not necessary to constitute the conveyance motor 42 in the conveyance device 26 in a good inversion like the 1st example mentioned above.

[0106]

[Explanation of other modifications] In explanation of the example mentioned above, although it took the post and explained when an electronic reproducing unit was applied as an example of the image reader with which the automatic manuscript feed gear concerning this invention is attached, it cannot be overemphasized that the equipment which has image reading functions, such as a scanner and electronic facsimile apparatus, will be applied as an image reader, without limiting this invention to such application.

[0107] Moreover, in explanation of the example mentioned above, although it explained that the digital type electronic reproducing unit DC was applied as an electronic reproducing unit, this invention can be applied to the usual electronic reproducing unit which is not a digital type, for example, without being limited to such application. In this case, a part for the first portion of the manuscript of the large-sized size of A2 size automatically conveyed on platen glass by this automatic manuscript feed gear will be first copied on the form of predetermined size, and the second half part of this manuscript conveyed on platen glass next will be copied on the form of predetermined size. That is, where the manuscript of the large-sized size of A2 size is divided into two sheets of forms, also when copying automatically, the automatic manuscript feed gear of this invention can be applied.

[0108] Moreover, although it took the post and explained in explanation of the example mentioned above when the manuscript of A2 size was applied as a manuscript of large-sized size and the manuscript below A3 size was usually applied as a manuscript of size This invention usually, without being limited to such application with the manuscript of size Meaning the size specified in the image reading field of the platen glass of the image reader with which this automatic manuscript feed gear is attached, large-sized size means bigger size than the manuscript of the size specified by the image reading field of this platen glass.

[0109]

[Effect of the Invention] As explained in full detail above, the automatic manuscript feed gear concerning this invention According to the publication of claim 1, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and when said manuscript is twice the large-sized size of said predetermined size, said conveyance means is driven. Make a part for the

first portion of the manuscript of this large-sized size send in on the image reading field of said platen glass, and said conveyance means is driven after termination of the image reading scan for this first portion. It is characterized by providing the control means which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass.

[0110] Moreover, according to the publication of claim 2, the automatic manuscript feed gear concerning this invention is characterized by for said control means driving said conveyance means after termination of an image reading scan of the second half part of the manuscript of said large-sized size, and making paper deliver to the manuscript of this large-sized size from said platen glass in the equipment of claim 1.

[0111] Moreover, the automatic manuscript delivery approach concerning this invention According to the publication of claim 3, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript delivery approach for conveying automatically a manuscript twice the large-sized size of said predetermined size The 1st process which is made to convey the manuscript of said large-sized size along the direction which intersects perpendicularly with the longitudinal direction of said image reading field, and sends in a part for the first portion of the manuscript of this large-sized size on the image reading field of said platen glass, It is characterized by providing the 2nd process which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass after termination of the image reading scan for said first portion.

[0112] Moreover, according to the publication of claim 4, the automatic manuscript delivery approach concerning this invention is characterized by providing further the 3rd process to which the manuscript of said large-sized size is made to deliver from said platen glass after termination of an image reading scan of a part in the approach according to claim 3 said second half.

[0113] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 5, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and when said manuscript is twice the large-sized size of said predetermined size, said conveyance means is driven. A part for the first portion of the manuscript of this large-sized size is sent in on the image reading field of said platen glass. Output the 1st reading scan enabling signal to said electronic reproducing unit, and said conveyance means is driven in response to the 1st completion signal of a reading scan from said electronic reproducing unit. The second half part of the manuscript of said large-sized size is sent in on the image reading field of said platen glass. It is characterized by outputting the 2nd reading scan enabling signal to said electronic reproducing unit, driving said conveyance means in response to the 2nd completion signal of a reading scan from said electronic reproducing unit, and providing the control means to which the manuscript of said large-sized size is made to deliver from said platen glass.

[0114] Again. According to the publication of claim 6, the automatic manuscript delivery approach concerning this invention is equipped with the platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript delivery approach for conveying automatically a manuscript twice the large-sized size of said predetermined size The 1st process which is made to convey the manuscript of said large-sized size along the direction which intersects perpendicularly with the longitudinal direction of said image reading field, and sends in a part for the first portion of the manuscript of this large-sized size on the image reading field of said platen glass, The 2nd process which outputs the 1st reading scan enabling signal to said electronic reproducing unit after a part for the first portion of the manuscript of this large-sized size is sent in on the image reading field of said platen glass, The 3rd process which sends in the second half part of the manuscript of said large-sized size on the image reading field of said platen glass in response to the 1st completion signal of a reading scan from said electronic reproducing unit, The 4th process which outputs the 2nd reading scan enabling signal to said electronic reproducing unit after the second half part of the manuscript of this large-sized size is sent in on the image reading field of said platen glass, It is characterized by providing the 5th process to which the manuscript of said large-

sized size is made to deliver from said platen glass in response to the 2nd completion signal of a reading scan from said electronic reproducing unit.

[0115] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 7, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass The body attached in the top face of said electronic reproducing unit free [rotation] in said platen glass between a wrap lock out location and the open position which opens this platen glass, While being attached in this body and laying the manuscript of the usual size below said predetermined size An installation means by which a manuscript twice the large-sized size of said predetermined size is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, It is attached in said body and the manuscript laid in said installation means is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of said body, It is characterized by providing the 2nd delivery means which makes the manuscript of said large-sized size which the reading scan ended deliver to the side of said body.

[0116] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 8, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass The body attached in the top face of said electronic reproducing unit free [rotation] in said platen glass between a wrap lock out location and the open position which opens this platen glass, While being attached in this body and laying the manuscript of the usual size below said predetermined size An installation means by which a manuscript twice the large-sized size of said predetermined size is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, It is attached in said body and the manuscript laid in said installation means is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st location which the reading scan ended and which the top face of said body is made to usually deliver to the drive of said conveyance means with the manuscript of size, It is characterized by providing the change means changed between the 2nd location which the side of said body is made to deliver to the drive of said conveyance means with the manuscript of said large-sized size which the reading scan ended.

[0117] Moreover, according to the publication of claim 9, in equipment according to claim 7 or 8, said body is that back end edge, and the automatic manuscript feed gear concerning this invention is characterized by being supported to revolve by the top-face back end edge of said electronic reproducing unit free [rotation].

[0118] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 10, it sets to equipment given in claim 7 thru/or any 1 term of 9. Said platen glass It is installed in longitudinal-direction sideways to an actuated valve position. Said installation means It is attached in the posterior part of said body, and has the manuscript base where a manuscript is laid upward in a manuscript side, taking-in conveyance of said manuscript is once carried out towards a back side from said manuscript base, and it is characterized by being conveyed on the image reading field of said platen glass, where a front flesh side is reversed in the shape of U character.

[0119] Moreover, according to the publication of claim 11, the automatic manuscript feed gear concerning this invention is characterized by for the manuscript of said large-sized size turning termination of said read operation to after and said actuated valve position, and delivering it to a near side in equipment according to claim 10.

[0120] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 12, it sets to equipment according to claim 8. Said change means The change gate arranged free [rotation] between said 1st location and 2nd location, It is characterized by having the change driving means which said manuscript brings said change gate to the 1st location when [said] it is usually size, and brings said change gate to the 2nd location when said manuscript is said large-sized size.

[0121] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 13, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size

may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass Free [rotation between a wrap lock out location and the open position which opens this platen glass], while being attached in the top face of said electronic reproducing unit, said platen glass The body with which manual bypass insertion opening with which manual bypass of the manuscript twice the large-sized size of said predetermined size is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles, and which is inserted was formed, An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and said manuscript of said large-sized size usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which was laid in said installation means and which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of said body, It is characterized by providing the 2nd delivery means which makes the manuscript of said large-sized size which the reading scan ended deliver to the side of said body.

[0122] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 14, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass Free [rotation between a wrap lock out location and the open position which opens this platen glass], while being attached in the top face of said electronic reproducing unit, said platen glass The body with which manual bypass insertion opening with which manual bypass of the manuscript twice the large-sized size of said predetermined size is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles, and which is inserted was formed, An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and in case said manuscript is sent in on the image reading field of platen glass In case it is scrupulous and there is nothing in the size of said manuscript, said conveyance means is driven so that it may be conveyed along a predetermined direction, and paper is delivered to said manuscript from platen glass The size of said manuscript in [said] being usually size In being said large-sized size as it conveys along said predetermined direction and paper is delivered to the top face of said body and With said predetermined direction, it is characterized by providing the control means which carries out drive control of said conveyance means so that it may convey along an opposite direction and paper may be delivered from said manual bypass insertion opening.

[0123] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 15, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass Free [rotation between a wrap lock out location and the open position which opens this platen glass], while being attached in the top face of said image reader, said platen glass The body with which manual bypass insertion opening with which manual bypass of the manuscript twice the large-sized size of said predetermined size is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles, and which is inserted was formed, An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and said 1st location which the reading scan ended and which the top face of said body is made to usually deliver to the drive of said conveyance means with the manuscript of size, It is

characterized by providing the change means changed between the 2nd location which the side of said body is made to deliver to the drive of said conveyance means with the manuscript of said large-sized size which the reading scan ended.

[0124] Moreover, according to the publication of claim 16, in equipment given in claim 13 thru/or any 1 term of 15, said body is that back end edge, and the automatic manuscript feed gear concerning this invention is characterized by being supported to revolve by the top-face back end edge of said image reader free [rotation].

[0125] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 17, it sets to equipment given in any 1 term of claims 13, 14, and 16. Said platen glass It is installed in longitudinal-direction sideways to an actuated valve position. Said installation means It is attached in the anterior part of said body, and has the manuscript base where a manuscript is laid upward in a manuscript side. Said manuscript Taking-in conveyance is once carried out towards said actuated valve position at a near side from said manuscript base, and it is characterized by being conveyed on the image reading field of said platen glass, where a front flesh side is reversed in the shape of U character.

[0126] Moreover, according to the publication of claim 18, in equipment according to claim 11 or 17, in case the automatic manuscript feed gear concerning this invention delivers paper to the manuscript of said large-sized size, it is characterized by providing further a stop means to stop that delivery direction back end by predetermined thrust.

[0127] Moreover, according to the publication of claim 19, the automatic manuscript feed gear concerning this invention is characterized by equipping said stop means with the press member which forces and stops the delivery direction back end of the manuscript of said large-sized size by predetermined thrust on said platen glass in equipment according to claim 18.

[0128] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 20, it sets to equipment according to claim 15. Said platen glass It is installed in longitudinal-direction sideways to an actuated valve position. Said installation means It is attached in the anterior part of said body, and has the manuscript base where a manuscript is laid upward in a manuscript side. Said manuscript Taking-in conveyance is once carried out towards said actuated valve position at a near side from said manuscript base, and it is characterized by being conveyed on the image reading field of said platen glass, where a front flesh side is reversed in the shape of U character.

[0129] Moreover, according to the publication of claim 21, in equipment according to claim 20, in case the automatic manuscript feed gear concerning this invention delivers paper to the manuscript of said large-sized size, it is characterized by providing further a stop means to stop that delivery direction back end by predetermined thrust.

[0130] Moreover, according to the publication of claim 22, the automatic manuscript feed gear concerning this invention is characterized by equipping said stop means with the press member which forces and stops the delivery direction back end of the manuscript of said large-sized size by predetermined thrust on said platen glass in equipment according to claim 21.

[0131] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 23, it sets to equipment according to claim 22. Said change means The change gate arranged free [rotation] between said 1st location and 2nd location, The size of said manuscript brings said change gate to the 1st location, when [said] it is usually size. They are the description and sushi ***** about having the change driving means which brings said change gate to the 2nd location, changing to said press member, and the gate consisting of same members, when it is said large-sized size.

[0132] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 24, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass The body attached in the top face of said image reader free [rotation] in said platen glass between a wrap lock out location and the open position which opens this platen glass, While being attached in said body movable between the 1st location in which it is located above the top face of this body, and the 2nd location which projects in the side of this body and laying the manuscript of the usual size below said predetermined size in it The manuscript base in which a manuscript twice the large-sized size of said predetermined size is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, When said manuscript base is located in the 1st location, the manuscript laid in this manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The 1st conveyance means for sending in on the image reading field of this platen glass, When said manuscript base is located in the 2nd location, the manuscript laid in said manuscript base is conveyed along the

direction which intersects perpendicularly with the longitudinal direction of said image reading field. It is characterized by providing the 2nd conveyance means for sending in on the image reading field of this platen glass, and the paper output tray to which the manuscript which it was arranged on the top face of said body, and the reading scan ended is delivered.

[0133] Moreover, according to the publication of claim 25, the automatic manuscript feed gear concerning this invention is characterized by laying the manuscript of said large-sized size in said manuscript base which the manuscript of size is usually laid and is in said 2nd location in the manuscript base in said 1st location in equipment according to claim 24.

[0134] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 26, it sets to equipment given in any 1 term of claims 7, 8, 13, 14, 15, and 25. When said manuscript is said large-sized size, said conveyance means is driven. Make a part for the first portion of the manuscript of this large-sized size send in on the image reading field of said platen glass, and said conveyance means is driven after termination of the image reading scan for this first portion. It is characterized by providing further the control means which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass.

[0135] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 27, resemble any 1 term of claims 7, 8, 13, 14, 15, and 25, and it sets to the equipment of a publication. When said manuscript is said large-sized size, said conveyance means is driven. A part for the first portion of the manuscript of this large-sized size is sent in on the image reading field of said platen glass. Output the 1st reading scan enabling signal to said image reader, and said conveyance means is driven in response to the 1st completion signal of a reading scan from said image reader. The second half part of the manuscript of said large-sized size is sent in on the image reading field of said platen glass. Output the 2nd reading scan enabling signal to said image reader, and said conveyance means is driven in response to the 2nd completion signal of a reading scan from said image reader. It is characterized by providing further the control means to which the manuscript of said large-sized size is made to deliver from said platen glass.

[0136] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 28, it sets to equipment according to claim 24 or 25. Said paper output tray When the evacuation location which approached the top face of said body when it was attached movable to said body and said manuscript base was located in the 1st location is brought and said manuscript base is located in the 2nd location, it is characterized by bringing the location rotated from said evacuation location to the upper part.

[0137] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 29, it sets to equipment according to claim 24 or 25. Said paper output tray Are attached movable to said body, and when said manuscript base is located in the 1st location, said paper output tray When the evacuation location close to the top face of said body is brought and said manuscript base is located in the 2nd location, it is characterized by providing further the interlocking means brought to the location rotated from said evacuation location to the upper part.

[0138] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 30, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass and the size of said manuscript When [which shows that smaller than said predetermined size it is usually size] size information is usually brought about Drive control of said conveyance means is carried out so that a manuscript may be conveyed continuously, and when the large-sized size information which shows that it is bigger large-sized size than said predetermined size is brought about, it is characterized by providing the control means which carries out drive control of said conveyance means intermittently.

[0139] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 31, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. When [to which the size of said manuscript indicates it to be a conveyance means for sending in on this platen glass that smaller than said predetermined size it is usually size] size information is usually brought about It is characterized by providing the control means which this manuscript is

conveyed through the 1st conveyance way, and makes this manuscript convey through the 2nd conveyance way when the large-sized size information which shows that it is bigger large-sized size than said predetermined size is brought about.

[0140] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 32, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. When [to which the size of said manuscript indicates it to be a conveyance means for sending in on this PURATE glass that smaller than said predetermined size it is usually size] size information is usually brought about When the large-sized size information which drives said conveyance means continuously, conveys this manuscript through the 1st conveyance way, and shows that it is bigger large-sized size than said predetermined size is brought about It is characterized by providing the control means which said conveyance means is driven [control means] intermittently and makes this manuscript convey through the 2nd conveyance way.

[0141] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 33, any 1 term of claims 30, 31, and 32 is equipped with a distinction means to distinguish the size of said manuscript, in the equipment of a publication. This distinction means When the manuscript size which usually outputted size information to said control means, and was distinguished when the distinguished manuscript size was usually size is large-sized size, it is characterized by outputting large-sized size information to said control means.

[0142] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 34, it sets to equipment according to claim 33. Said distinction means It has the manual bypass sensor which detects that the manuscript was inserted in manual bypass insertion opening. This manual bypass sensor In the condition that the manuscript is not inserted here, it is characterized by usually outputting size information to said control means, and outputting large-sized size information to said control means in the condition that a manuscript is inserted here.

[0143] Moreover, the automatic manuscript feed gear concerning this invention The 1st location in which the manuscript of said large-sized size is laid in equipment according to claim 33 according to the publication of claim 35, The manuscript base arranged movable between said 2nd location in which the manuscript of size is usually laid is provided further. Said distinction means It has the manuscript base sensor which detects the location of this manuscript base. This manuscript base sensor When said manuscript base is located in the 1st location, said large-sized size information is outputted to said control means, and when said manuscript base is located in the 2nd location, said usual size information is characterized by said thing [carrying out a control means output].

[0144] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 36, it sets to equipment according to claim 31 or 32. Said 1st conveyance way From manuscript taking-in opening with which the manuscript of size is incorporated, on said platen glass Usually, said carrying-in way which usually conveys the manuscript of size, It has the 1st delivery way where said platen glass to the 1st delivery opening discharges the manuscript of usual size [finishing / image reading]. Said 2nd conveyance way It is characterized by having said carrying-in way and the 2nd delivery way where said platen glass to the 2nd delivery opening discharges the manuscript of large-sized size [finishing / image reading].

[0145] Moreover, the automatic manuscript feed gear concerning this invention According to the publication of claim 37, it sets to equipment according to claim 31 or 32. Said 1st conveyance way From manuscript taking-in opening with which the manuscript of size is incorporated, on said platen glass Usually, said carrying-in way which usually conveys the manuscript of size, It has the 1st delivery way where said platen glass to the 1st delivery opening discharges the manuscript of usual size [finishing / image reading]. Said 2nd conveyance way The manuscript of large-sized size is characterized by having the manual bypass conveyance way which conveys the manuscript of said large-sized size on said platen glass, and the 2nd delivery way where said platen glass to the 2nd delivery opening discharges the manuscript of large-sized size [finishing / image reading] from manual bypass insertion opening by which manual bypass insertion is carried out.

[0146] Moreover, according to the publication of claim 38, the automatic manuscript feed gear concerning this invention is characterized by forming said 2nd delivery opening [said / manual bypass insertion opening and] in equipment according to claim 37.

[0147] Moreover, according to the publication of claim 39, the automatic manuscript feed gear concerning this invention is characterized by arranging said distinction means in said image reader side in equipment according to claim 33.

[0148] Therefore, according to this invention, the automatic manuscript feed gear which can convey automatically a manuscript twice the size of the manuscript size specified in the size of platen glass on the image reading field of platen glass, and the automatic manuscript delivery approach will be offered.

[0149] Moreover, while the manuscript of the size below the manuscript size specified in the size of platen glass is automatically made by conveyance ***** on the image reading field of platen glass according to this invention, the automatic manuscript feed gear which can also convey automatically a manuscript twice the size of the size of platen glass on the image reading field of platen glass, and the automatic manuscript delivery approach will be offered.

[0150] Moreover, according to this invention, the automatic manuscript feed gear which can be automatically conveyed one by one on the image reading field of platen glass where it divided into one half the manuscript twice the size of the manuscript size specified in the size of platen glass and it is divided, and the automatic manuscript delivery approach will be offered.

[0151]

[Translation done.]

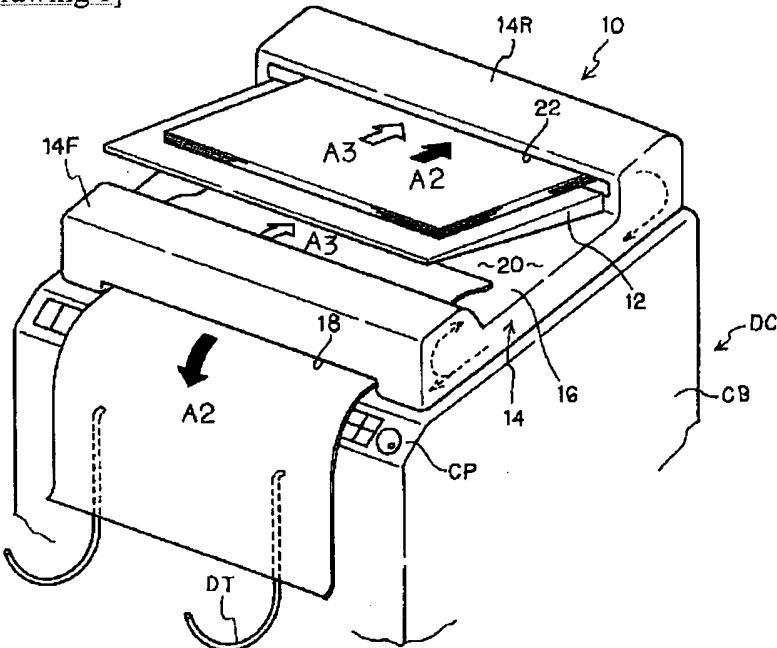
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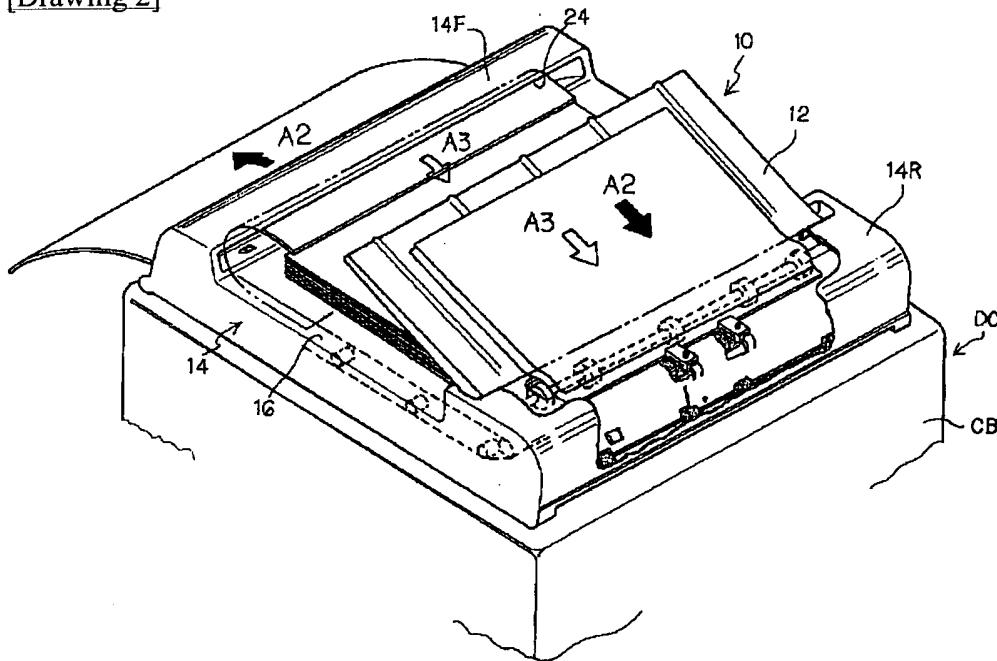
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. *** shows the word which can not be translated.
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DRAWINGS

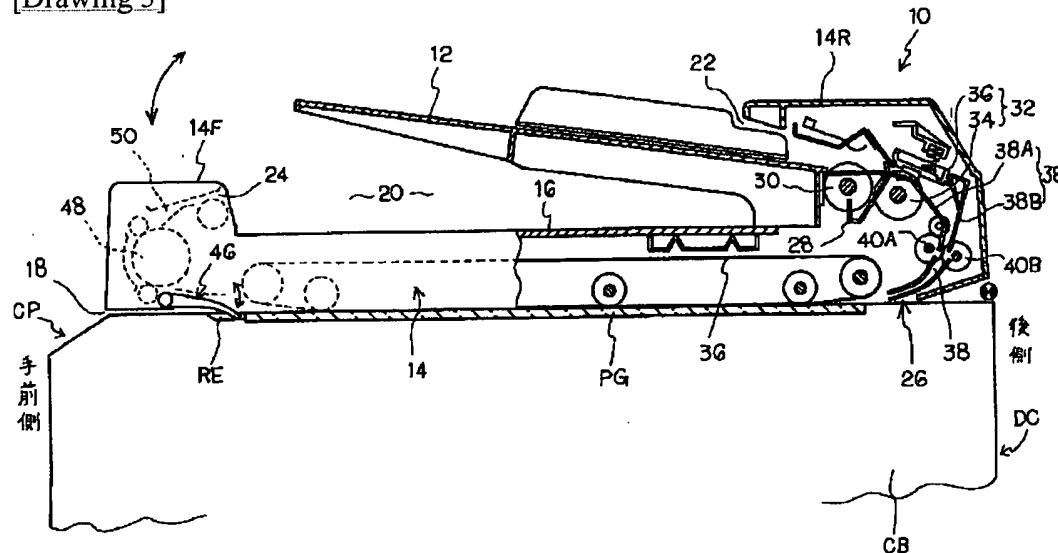
[Drawing 1]



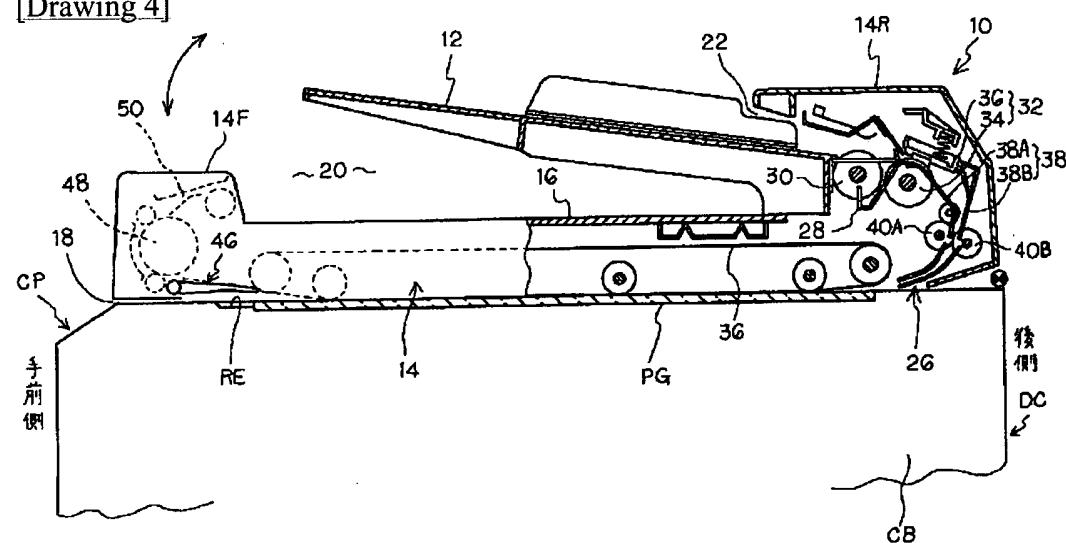
[Drawing 2]



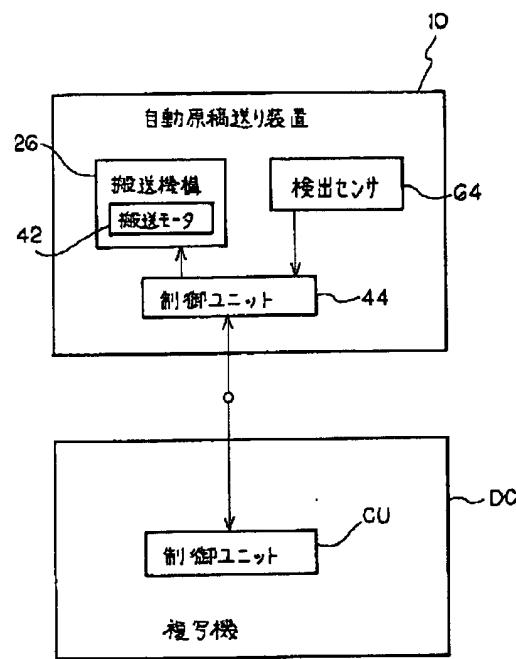
[Drawing 3]



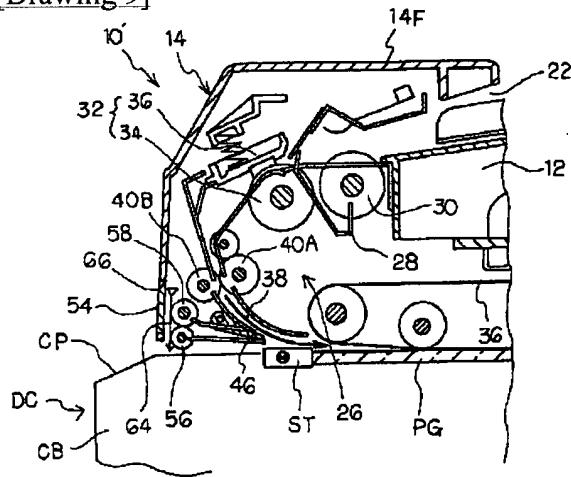
[Drawing 4]



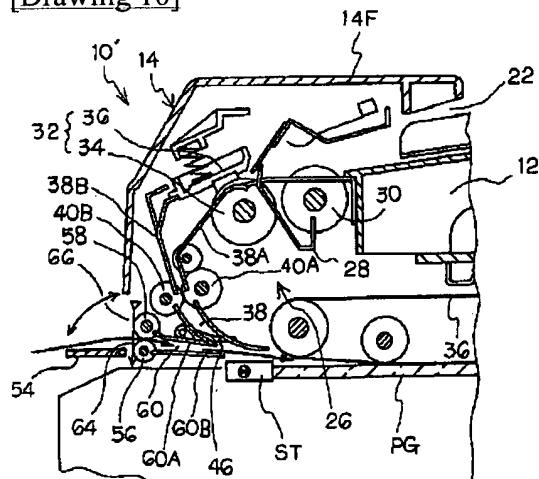
[Drawing 5]



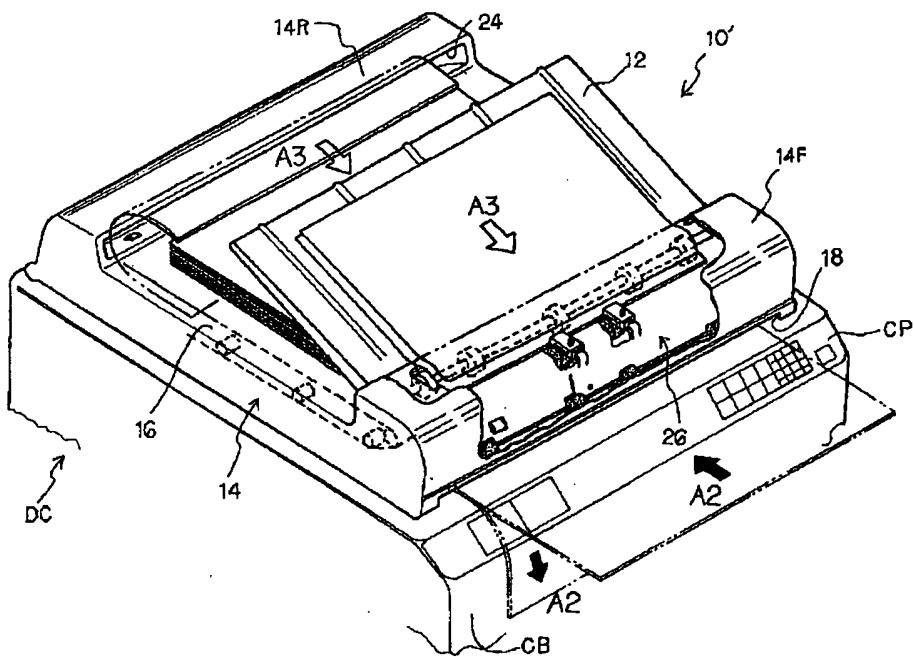
[Drawing 9]



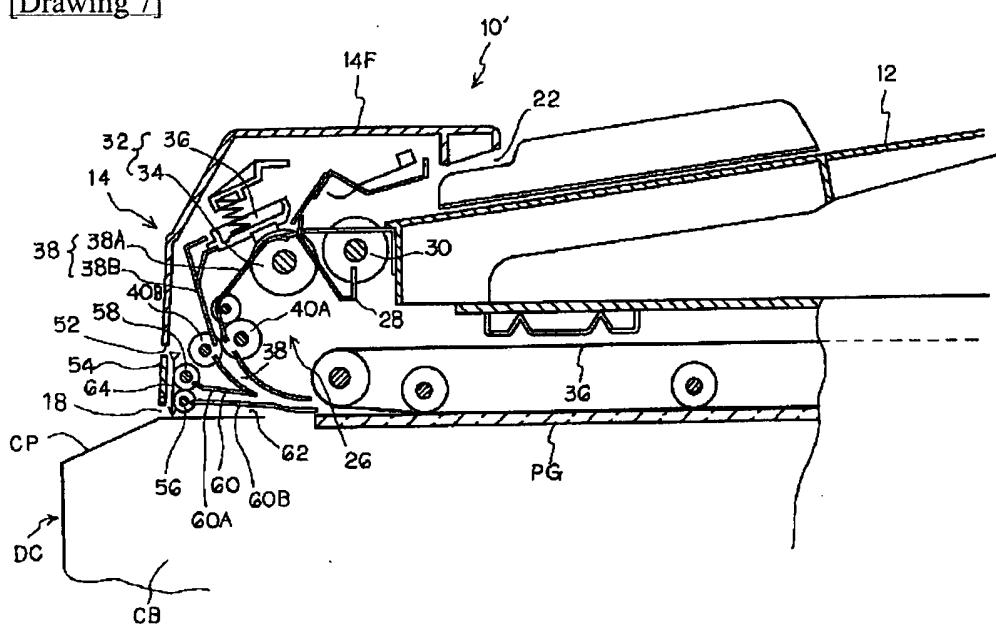
[Drawing 10]



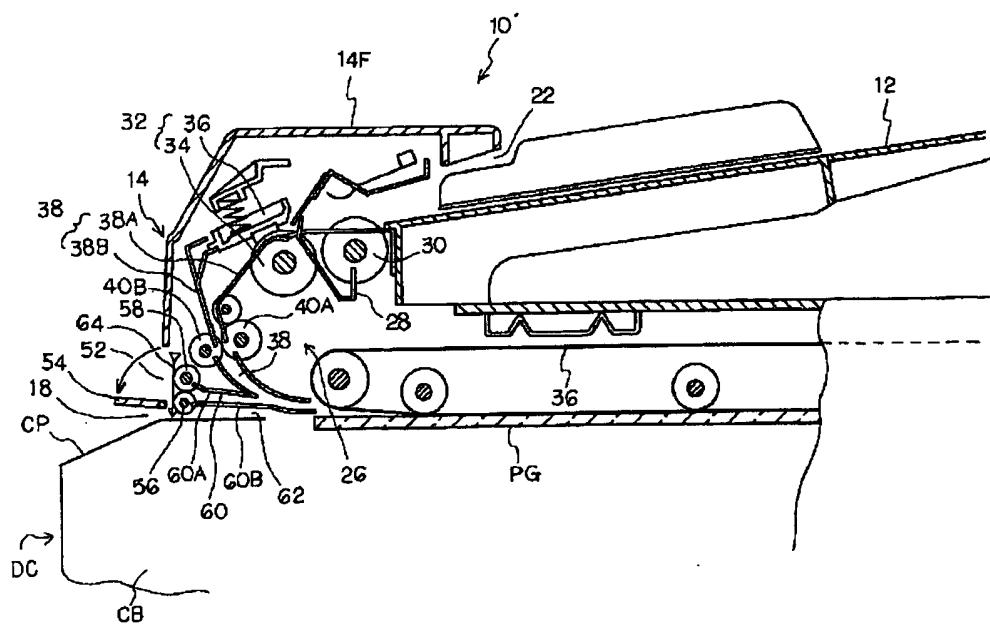
[Drawing 6]



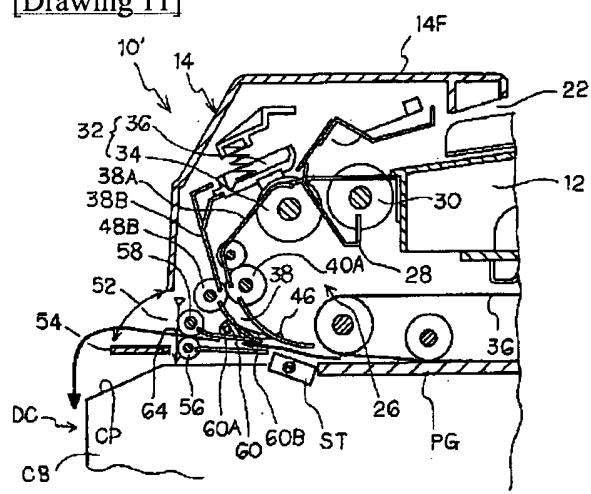
[Drawing 7]



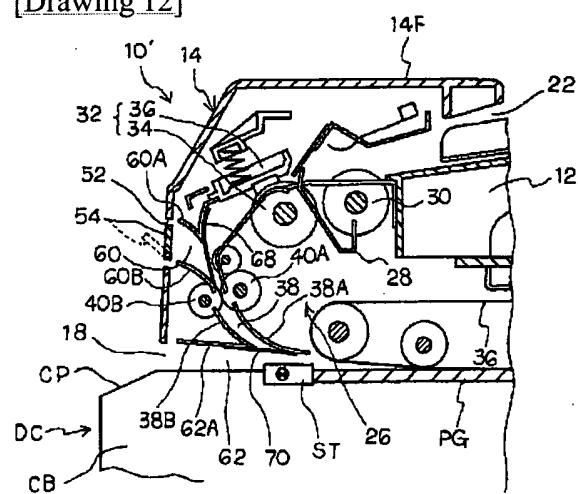
[Drawing 8]



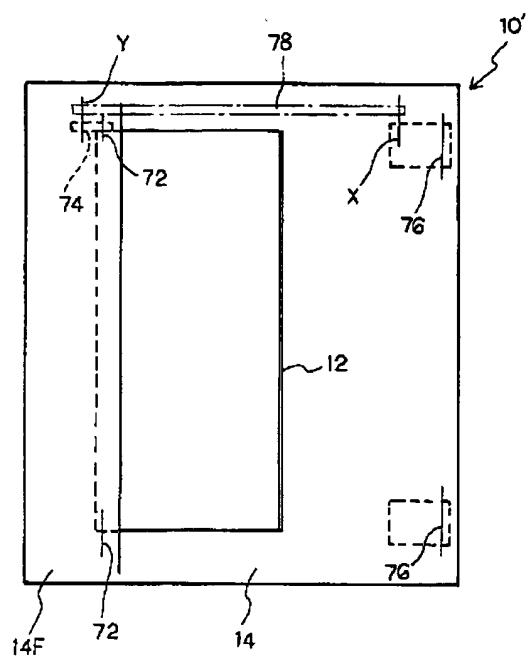
[Drawing 11]



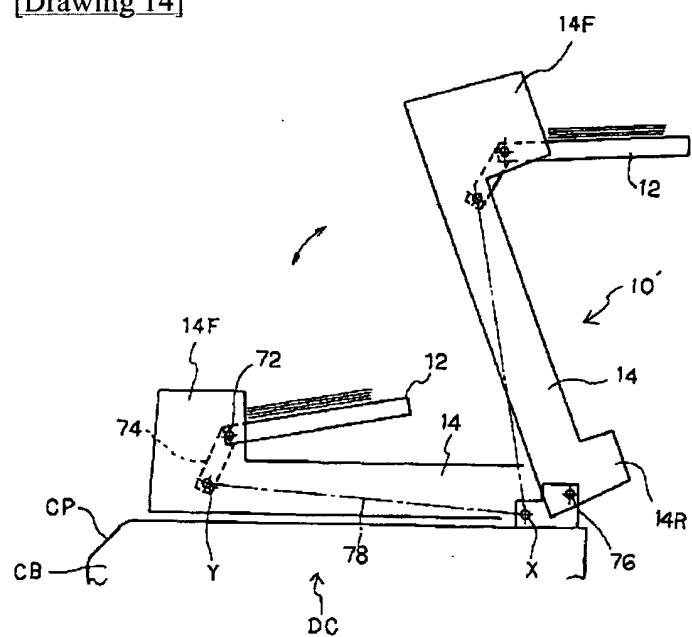
[Drawing 12]



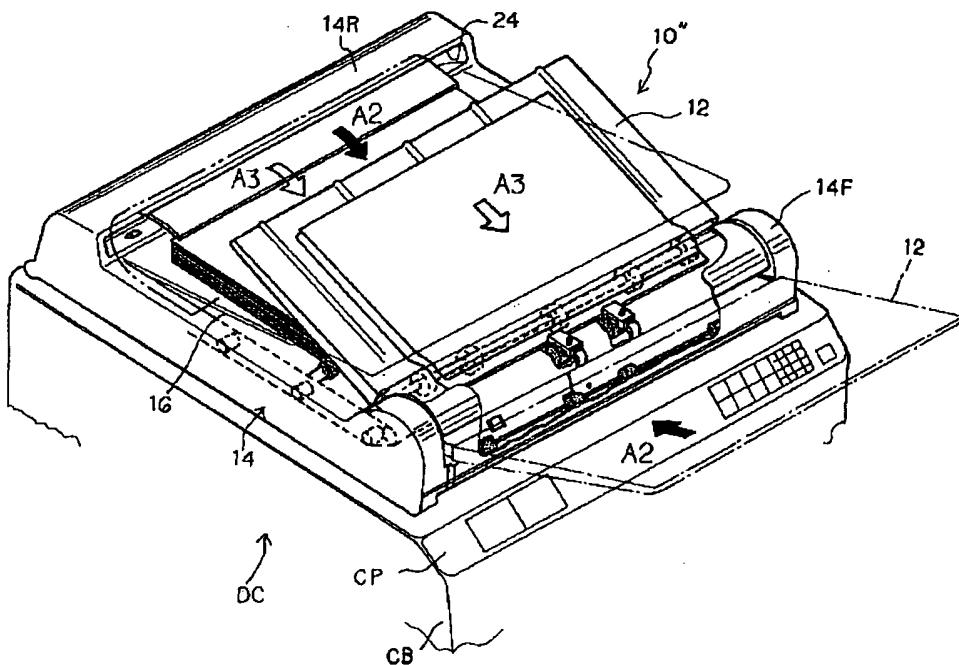
[Drawing 13]



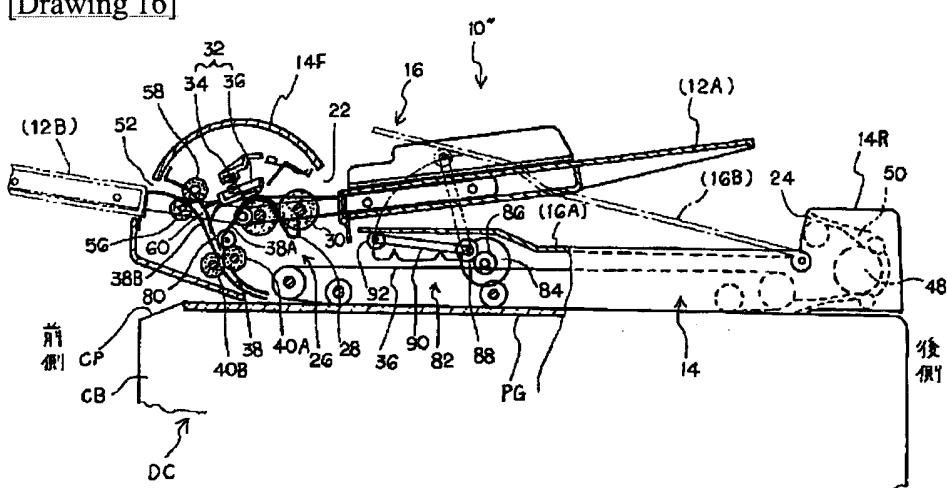
[Drawing 14]



[Drawing 15]



[Drawing 16]



[Translation done.]

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3. In the drawings, any words are not translated.

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[Filing Date] February 7, Heisei 14 (2002. 2.7)

[Procedure amendment 1]

[Document to be Amended] Specification

[Item(s) to be Amended] Whole sentence

[Method of Amendment] Modification

[Proposed Amendment]

[Document Name] Specification

[Title of the Invention] An automatic manuscript feed gear and the automatic manuscript delivery approach

[Claim(s)]

[Claim 1] The automatic manuscript feed gear for having platen glass which has the image reading field which is characterized by to provide the following, and which is laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, conveying a manuscript automatically to the image reader constituted so that the reading scan of the image of the manuscript laid on the image reading field of this platen glass may carry out along with the longitudinal direction of this image reading field, and sending in on the image reading field of said platen glass The conveyance means for conveying a manuscript along the direction which intersects perpendicularly with the longitudinal direction of said image reading field, and sending in on the image reading field of this platen glass The control means which said conveyance means is driven, makes a part for the first portion of the manuscript of this large-sized size send in on the image reading field of said platen glass, and said conveyance means is driven [control means] after termination of the image reading scan for this first portion, and makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass when said manuscript is larger large-sized size than said image reading field

[Claim 2] The automatic manuscript delivery approach for conveying automatically the manuscript of large large-sized

size than said image reading field to the image reader constituted so that the reading scan of the image of the manuscript which a manuscript was equipped with the platen glass which has the image reading field which is characterized by to provide the following, and which is laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, and was laid on the image reading field of this platen glass may carry out along with the longitudinal direction of this image reading field The 1st process which is made to convey the manuscript of said large-sized size along the direction which intersects perpendicularly with the longitudinal direction of said image reading field, and sends in a part for the first portion of the manuscript of this large-sized size on the image reading field of said platen glass The 2nd process which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass after termination of the image reading scan for said first portion

[Claim 3] The automatic manuscript feed gear for having platen glass which has the image reading field which is characterized by to provide the following, and which is laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, conveying a manuscript automatically to the image reader constituted so that the reading scan of the image of the manuscript laid on the image reading field of this platen glass may carry out along with the longitudinal direction of this image reading field, and sending in on the image reading field of said platen glass The conveyance means for conveying a manuscript along the direction which intersects perpendicularly with the longitudinal direction of said image reading field, and sending in on the image reading field of this platen glass When said manuscript is larger large-sized size than said image reading field, said conveyance means is driven. A part for the first portion of the manuscript of this large-sized size is sent in on the image reading field of said platen glass. Output the 1st reading scan enabling signal to said image reader, and said conveyance means is driven in response to the 1st completion signal of a reading scan from said image reader. The second half part of the manuscript of said large-sized size is sent in on the image reading field of said platen glass. The control means to which output the 2nd reading scan enabling signal to said image reader, drive said conveyance means in response to the 2nd completion signal of a reading scan from said image reader, and the manuscript of said large-sized size is made to deliver from said platen glass

[Claim 4] The automatic manuscript feed gear for having platen glass which has the image reading field which is characterized by to provide the following, and which is laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, conveying a manuscript automatically to the image reader constituted so that the reading scan of the image of the manuscript laid on the image reading field of this platen glass may carry out along with the longitudinal direction of this image reading field, and sending in on the image reading field of said platen glass Said platen glass is wrap-lock-out-located. The body attached in the top face of said image reader free [rotation] between the open positions which open this platen glass An installation means by which the manuscript of larger large-sized size than said image reading field is laid in the condition of having made the longitudinal direction of said image reading field, and that longitudinal direction crossing at right angles while being attached in this body and laying the manuscript of the usual size below said predetermined size It is attached in said body and the manuscript laid in said installation means is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, said 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of said body, and the 2nd delivery means which makes the manuscript of said large-sized size which the reading scan ended deliver to the side of said body

[Claim 5] The automatic manuscript feed gear for having image reading field platen glass which is characterized by to provide the following and which is laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, conveying a manuscript automatically to the image reader constituted so that the reading scan of the image of the manuscript laid on the image reading field of this platen glass might be carried out along with the longitudinal direction of this image reading field, and sending in on the image reading field of said platen glass Said platen glass is wrap-lock-out-located. The body with which manual bypass insertion opening with which manual bypass of the manuscript of larger large-sized size than said image reading field is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles while being attached in the top face of said image reader, and which is inserted was formed free [rotation between the open positions which open this platen glass] An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, said 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of said body, and the 2nd delivery means which makes the manuscript of said large-sized size which the reading scan

ended deliver to the side of said body

[Claim 6] The automatic manuscript feed gear for having platen glass which has the image reading field which is characterized by to provide the following, and which is laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, conveying a manuscript automatically to the image reader constituted so that the reading scan of the image of the manuscript laid on the image reading field of this platen glass may carry out along with the longitudinal direction of this image reading field, and sending in on the image reading field of said platen glass Said platen glass is wrap-lock-out-located. The body with which manual bypass insertion opening with which manual bypass of the manuscript of larger large-sized size than said image reading field is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles while being attached in the top face of said image reader, and which is inserted was formed free [rotation between the open positions which open this platen glass] An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said platen glass. The conveyance means for sending in on the image reading field of this platen glass, and in case said manuscript is sent in on the image reading field of platen glass In case it is scrupulous and there is nothing in the size of said manuscript, said conveyance means is driven so that it may be conveyed along a predetermined direction, and paper is delivered to said manuscript from platen glass When the size of said manuscript is said usual size The control means which carries out drive control of said conveyance means so that it may convey along an opposite direction with said predetermined direction and paper may be delivered from said manual bypass insertion opening, when it is said large-sized size as it conveys along said predetermined direction and paper is delivered to the top face of said body and

[Claim 7] The automatic manuscript feed gear for having platen glass which has the image reading field which is characterized by to provide the following, and which is laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, conveying a manuscript automatically to the image reader constituted so that the reading scan of the image of the manuscript laid on the image reading field of this platen glass may carry out along with the longitudinal direction of this image reading field, and sending in on the image reading field of said platen glass Said platen glass is wrap-lock-out-located. The body attached in the top face of said image reader free [rotation] between the open positions which open this platen glass The 1st location located in said body above the top face of this body While being attached movable between the 2nd location which projects in the side of this body and laying the manuscript of the usual size below said predetermined size The manuscript base in which the manuscript of larger large-sized size than said image reading field is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, When said manuscript base is located in the 1st location, the manuscript laid in this manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The 1st conveyance means for sending in on the image reading field of this platen glass, When said manuscript base is located in the 2nd location, the manuscript laid in said manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The paper output tray to which the manuscript which it was arranged on the 2nd conveyance means for sending in on this platen glass and the top face of said body, and the reading scan ended is delivered

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention is equipped with the platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, and conveys a manuscript automatically to the image reader constituted so that the reading scan of the image of the manuscript laid on the image reading field of this platen glass might be carried out along with the longitudinal direction of this image reading field. The automatic manuscript feed gear for sending in on the image reading field of said platen glass, And it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. It is related with the automatic manuscript delivery approach for conveying automatically the manuscript of larger size than said predetermined size to the image reader constituted so that the reading scan of the image of the manuscript laid on the image reading field of this platen glass might be carried out along with the longitudinal direction of this image reading field.

[0002]

[Description of the Prior Art] On the platen glass with which the manuscript of equipments which have an image reading function at least, such as an electronic reproducing unit, is laid conventionally, various automatic manuscript

feed gears for conveying a manuscript automatically are known, and are offered by practical use. Moreover, although the electronic reproducing unit which can copy the manuscript of large-sized size like A3 size in office etc. begun to be used conventionally, what was constituted on a large scale is offered so that power feed of a large-sized size manuscript like A3 size can be carried out that an automatic manuscript feed gear should correspond to this.

[0003] Generally carrying out a division copy on the other hand, in recent years using the electronic reproducing unit which pressed down platen glass with A3 size, since it enlarges too much also to remainder and there is a problem in respect of the point of an installation tooth space or cost, when there is a request which copies the manuscript of A2 size twice the magnitude of A3 size, on the other hand the area of platen glass is make equivalent to A2 size is perform.

[0004] Specifically, it is the manuscript of A2 size. A part for the first portion equivalent to A3 size is first copied in the form of A3 size. Next, a part is copied like the form of A3 size the second half in which it is equivalent to A3 size. Both are joined together. Obtain the copied form of A2 size or The contraction copy of the part is carried out at about 70% like the form of A4 size the second half which the contraction copy of the part for the first portion equivalent to A3 size is carried out at about 70% at the form of A4 size, next is equivalent to A3 size, and he joins both together, and is trying to obtain the copy image of A3 size. Moreover, when using the so-called digital type electronic reproducing unit with which practical use is beginning to be presented in recent years, image reading is carried out by the first portion, Make memory once memorize the image information for this first portion, next carry out image reading of the part in the second half, memory is made to memorize the image information of a part this second half, both are compounded, and also making it copy in the form of A3 size is performed in the condition of having reduced to about 70%.

[0005]

[Problem(s) to be Solved by the Invention] However, it sets to the automatic manuscript feed gear of a configuration conventionally. There is no configuration which power feed of the manuscript of such large-sized size can be first carried out [configuration] by the first portion, and power feed of the second half part of this can be carried out [configuration] after the image reading scan termination for this first portion, and can carry out image reading of the part this second half. This sake, In copying the manuscript of large-sized size by the electronic reproducing unit which has platen glass of A3 size By hand, an operator sets first a part for the first portion of the manuscript of A2 size on platen glass, and is copy actuation () of this. Or the manuscript of large-sized size must be moved by hand after completion of an image reading scan, the second half part of this must be set on platen glass, the activity is troublesome and solution is demanded.

[0006]

[Objects of the Invention] Accomplishing this invention in view of the situation mentioned above, the purpose of this invention is offering the automatic manuscript feed gear which can convey automatically a manuscript twice the size of the manuscript size specified in the size of the image reading field of platen glass on the image reading field of platen glass, and the automatic manuscript delivery approach.

[0007] Moreover, another purpose of this invention is offering the automatic manuscript feed gear which can also convey automatically a manuscript twice the size of the size of an image reading field on the image reading field of platen glass, and the automatic manuscript delivery approach while the manuscript of the size below the manuscript size specified in the size of the image reading field of platen glass is automatically made by conveyance ***** on the image reading field of platen glass.

[0008] Moreover, other purposes of this invention are offering the automatic manuscript feed gear which can be automatically conveyed one by one on the image reading field of platen glass where it divided into one half the manuscript twice the size of the manuscript size specified in the size of the image reading field of platen glass and it is divided, and the automatic manuscript delivery approach.

[0009]

[Means for Solving the Problem] In order to solve the technical problem mentioned above and to attain the purpose, the automatic manuscript feed gear concerning this invention For example, it has platen glass which has the image reading field which according to the publication is laid in claim 1 so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and when said manuscript is larger large-sized size than said image reading field, said conveyance means is driven. Make a part for the first portion of the manuscript of this large-sized size send in on the image reading field of said platen glass, and said conveyance means is driven after termination of the image

reading scan for this first portion. It is characterized by providing the control means which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass.

[0010] Moreover, the automatic manuscript delivery approach concerning this invention For example, according to the publication of claim 2, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript delivery approach for conveying automatically the manuscript of larger large-sized size than said image reading field The 1st process which is made to convey the manuscript of said large-sized size along the direction which intersects perpendicularly with the longitudinal direction of said image reading field, and sends in a part for the first portion of the manuscript of this large-sized size on the image reading field of said platen glass, It is characterized by providing the 2nd process which makes the second half part of the manuscript of said large-sized size send in on the image reading field of said platen glass after termination of the image reading scan for said first portion.

[0011] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 3, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, and when said manuscript is larger large-sized size than said image reading field, said conveyance means is driven. A part for the first portion of the manuscript of this large-sized size is sent in on the image reading field of said platen glass. Output the 1st reading scan enabling signal to said image reader, and said conveyance means is driven in response to the 1st completion signal of a reading scan from said image reader. The second half part of the manuscript of said large-sized size is sent in on the image reading field of said platen glass. It is characterized by outputting the 2nd reading scan enabling signal to said image reader, driving said conveyance means in response to the 2nd completion signal of a reading scan from said image reader, and providing the control means to which the manuscript of said large-sized size is made to deliver from said platen glass.

[0012] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 4, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field It is characterized by equipping the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass with the following. Said platen glass is wrap-lock-out-located. The body attached in the top face of said image reader free [rotation] between the open positions which open this platen glass While being attached in this body and laying the manuscript of the usual size below said predetermined size An installation means by which the manuscript of larger large-sized size than said image reading field is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, It is attached in said body and the manuscript laid in said installation means is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, said 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of said body, and the 2nd delivery means which makes the manuscript of said large-sized size which the reading scan ended deliver to the side of said body

[0013] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 5, it has image reading field platen glass laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field It is characterized by equipping the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass with the following. Said platen glass is wrap-lock-out-located. The body with which manual bypass insertion opening with which manual bypass of the manuscript of larger large-sized size than said image reading field is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles while being attached in the top face of said image reader, and which is inserted was formed free [rotation between the open

positions which open this platen glass] An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The conveyance means for sending in on the image reading field of this platen glass, said 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of said body, and the 2nd delivery means which makes the manuscript of said large-sized size which the reading scan ended deliver to the side of said body

[0014] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 6, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field It is characterized by equipping the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass with the following. Said platen glass is wrap-lock-out-located. The body with which manual bypass insertion opening with which manual bypass of the manuscript of larger large-sized size than said image reading field is carried out in the condition of having made the longitudinal direction of said image reading field and the longitudinal direction crossing at right angles while being attached in the top face of said image reader, and which is inserted was formed free [rotation between the open positions which open this platen glass] An installation means by which it is attached in this body and the manuscript of the usual size below said predetermined size is laid, It is attached in said body and the manuscript of said large-sized size which was laid in said installation means and which was usually inserted through the manuscript or said manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said platen glass. The conveyance means for sending in on the image reading field of this platen glass, and in case said manuscript is sent in on the image reading field of platen glass In case it is scrupulous and there is nothing in the size of said manuscript, said conveyance means is driven so that it may be conveyed along a predetermined direction, and paper is delivered to said manuscript from platen glass When the size of said manuscript is said usual size The control means which carries out drive control of said conveyance means so that it may convey along an opposite direction with said predetermined direction and paper may be delivered from said manual bypass insertion opening, when it is said large-sized size as it conveys along said predetermined direction and paper is delivered to the top face of said body and

[0015] Moreover, the automatic manuscript feed gear concerning this invention For example, according to the publication of claim 7, it has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of this platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of this image reading field It is characterized by equipping the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of said platen glass with the following. Said platen glass is wrap-lock-out-located. The body attached in the top face of said image reader free [rotation] between the open positions which open this platen glass While being attached in said body movable between the 1st location in which it is located above the top face of this body, and the 2nd location which projects in the side of this body and laying the manuscript of the usual size below said predetermined size in it The manuscript base in which the manuscript of larger large-sized size than said image reading field is laid in the condition of having made the longitudinal direction of said image reading field, and the longitudinal direction crossing at right angles, When said manuscript base is located in the 1st location, the manuscript laid in this manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The 1st conveyance means for sending in on the image reading field of this platen glass, When said manuscript base is located in the 2nd location, the manuscript laid in said manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of said image reading field. The paper output tray to which the manuscript which it was arranged on the 2nd conveyance means for sending in on this platen glass and the top face of said body, and the reading scan ended is delivered

[0016]

[Example] Below, the configuration of the 1st example of the automatic manuscript feed gear concerning this invention is explained with reference to an accompanying drawing at a detail.

[0017] [The approximate account of the digital type electronic reproducing unit DC]

First, the configuration of the digital type electronic reproducing unit (it is only hereafter called a copying machine) DC

applied as an example of the image reader with which the automatic manuscript feed gear 10 of this example is attached is roughly explained with reference to drawing 1 and drawing 2.

[0018] This copying machine DC is a well-known configuration, and is equipped with the platen glass PG (shown in drawing 3) which has the image reading field where the manuscript of A3 size as predetermined size is extensively laid in the top face of the body CB of a copying machine by horizontal ***** in this example. That is, this platen glass PG is arranged in the top face of the body CB of a copying machine by the longitudinal direction oblong to the actuated valve position by the operator while it is formed so that it may have slightly larger size than the manuscript of A3 size. And the control panel CP for setting image reading conditions and copy conditions, such as copy number of sheets and copy concentration, as a part for the long side by the side of this side (transverse plane) is arranged from the platen glass PG of the top face of the body CB of a copying machine.

[0019] And in this body CB of a copying machine, although not illustrated, the reading scanner for carrying out the reading scan of the image of the manuscript laid on the image reading field of platen glass PG optically, the memory section which once memorizes this image information that carried out the reading scan, and the electronic copying machine style for copying a reading image on a form based on the image information memorized by this memory section are arranged. In addition, the reading scanner is constituted so that the reading scan of the manuscript side of the manuscript laid on the image reading field of platen glass PG may be carried out along with the longitudinal direction of platen glass PG.

[0020] In addition, if it waits to input the reading scan enabling signal which shows the set complete from the automatic manuscript feed gear 10 mentioned later to the image reading field top of the platen glass PG of a manuscript, a reading scanner is driven and the reading scan in this reading scanner is completed, the control section which controls this copying machine DC is constituted so that the completion signal of a reading scan may be outputted to the automatic manuscript feed gear 10.

[0021] [The approximate account of the whole configuration of the automatic manuscript feed gear 10]

As shown in drawing 1 and drawing 2, the automatic manuscript feed gear 10 of this 1st example is attached in the back end edge of the top face of a copying machine DC free [rotation], rotates extensively the platen glass PG arranged in the top face of this copying machine DC from a wrap lock out location and this lock out location to the upper part, and is set up free [rotation] between the open positions which open platen glass PG extensively.

[0022] This automatic manuscript feed gear 10 is in the condition in a lock-out location so that it may illustrate, incorporates and conveys automatically the manuscript of at least one sheet laid on the manuscript base 12 attached in the ***** side of this automatic manuscript feed gear 10 on the image reading field of platen glass PG, presents copy actuation with it, and it is constituted so that a manuscript may take out from on platen glass PG with termination of copy actuation of this manuscript. On the other hand, although this automatic manuscript feed gear 10 is not illustrated, it is in the condition in an open position, and even if copy actuation is started, it is constituted so that manuscript conveyance actuation may not be performed at all.

[0023] In addition, while the manuscript of A3 size is horizontal *****, namely, being laid on the manuscript base 12 mentioned above in the condition of having made the longitudinal direction of the manuscript of A3 size in agreement with the longitudinal direction of platen glass PG A2 size which is twice the size of the manuscript of this A3 size ("large-sized size" is called hereafter.) A manuscript is longitudinal state, namely, it is constituted so that it may be laid in the condition of having made the longitudinal direction of the manuscript of large-sized size going to the longitudinal direction of platen glass PG direct. In addition, the manuscript below A3 size as a manuscript which the manuscript below A3 size is laid on this manuscript base 12, and is laid on this manuscript base 12 in the following explanation will be called the manuscript of "being usually size."

[0024] In this 1st example, moreover, a manuscript [finishing / a reading scan] When the size is usually size, in the condition of having been reversed, with the fetch actuation from platen glass PG Paper is delivered on the delivery base 16 specified on the top face of the body 14 of equipment of the automatic manuscript feed gear 10, and when the size is large-sized size With the fetch actuation from platen glass PG, it is taken out in the shape of a straight, and it is constituted so that paper may be delivered to the near side (namely, actuated-valve-position side) of the body 14 of equipment from the 1st delivery opening 18 formed in the front face of a body 14.

[0025] [Detail explanation of the configuration of the automatic manuscript feed gear 10]

{Explanation of the body 14 of equipment}

As shown in drawing 3, while this automatic manuscript feed gear 10 is attached through the hinge which is not illustrated on the top-face back end edge of a copying machine DC, it has the body 14 of equipment constituted so that the whole top face of a copying machine DC could be covered as sheathing covering, and the crevice 20 where the right-and-left side edge was opened wide, respectively is formed in the center section of this body 14 of equipment. That

is, both front partial 14F and back partial 14R of this body 14 of equipment are formed in the condition of having projected more nearly up than a central part (namely, base of a crevice 20). Moreover, the part which contains the conveyance belt which mentions the inferior surface of tongue of this body 14 of equipment later is opened wide. [0026] While the manuscript incorporation opening 22 is formed, the manuscript base 12 mentioned above is attached in the transverse plane of back partial (part for namely, drawing Nakamigi flank) 14R of this body 14 of equipment free [attachment and detachment] in the condition that it was open for free passage to this manuscript incorporation opening 22. In the installation condition, this manuscript base 12 is set up so that the bottom of drawing Nakamigi may be in the inclination condition of **. And the delivery base 16 where paper is delivered to the manuscript of usual size [finishing / a copy] is specified in the top face of the crevice 20 mentioned above. Moreover, the 2nd delivery opening 24 (shown in drawing 2) with which paper is delivered to a large-sized manuscript [finishing / a copy] where the delivery base 16 is attended is formed in the rear face of front partial 14F of this body 14 of equipment.

[0027] {Explanation of the conveyance device 26}

On the other hand, in the body 14 of equipment mentioned above, the conveyance device 26 for carrying out taking-in conveyance of the image of the manuscript laid on the feed base 12 on platen glass PL is contained. Below, the configuration of this conveyance device 26 is explained.

[0028] This conveyance device 26 was arranged in back partial 14R of the body 14 of equipment in the condition of having projected up more slightly than a conveyance way while being located behind the feed base 12, and is equipped with the stopper member 28 for the tip of the manuscript laid on the feed base 12 contacting, and holding in that location. Moreover, between this stopper member 28 and the point of the feed base 12, the pickup roller 30 for carrying out the sequential pickup of the manuscript on the manuscript base 12 from the bottom according to rotation is arranged.

[0029] And behind this stopper member 28, the separation mechanism 32 for dividing into one sheet at a time the manuscript taken up with the pickup roller 30 is arranged. This separation mechanism 32 consists of separation roller 32A arranged down the conveyance way, and separation pad 32A which it is arranged above the conveyance way and carries out a pressure welding to separation roller 32A by predetermined thrust in this example.

[0030] On the other hand, the conveyance belt 36 by which endless transit is carried out is arranged by the lower part of the body 14 of equipment in the condition of the pressure welding having been carried out to platen glass PG, and having extended from front partial 14F to back partial 14R. In this example, in the shape of [so-called] Caterpillar, this conveyance belt 36 is constituted so that the inferior surface of tongue of that front end and the back end may incline at a predetermined include angle to platen glass PG.

[0031] Moreover, in back partial 14R of the body 14 of equipment, the reversal conveyance way 38 for leading the manuscript separated by the separation mechanism 32 between the back parts between the conveyance belt 36 and platen glass PG (a part for a drawing Nakamigi flank), where a front flesh side is reversed is arranged. This reversal conveyance way 38 curves gently, and is specified from the reversal guide members 38A and 38B of the pair estranged mutually. Resist (namely, in order to prevent skew) roller pair 40 for taking resist of manuscript in the middle of conveyance A and 40B are interposed in the halfway section of this reversal conveyance way 38.

[0032] In addition, the pickup roller 30 mentioned above, separation roller 32A, the conveyance belt 36, and one resist roller 40A are received through the driving force transfer device in which driving force of the conveyance motor 42 shown in drawing 5 is not illustrated, and they are constituted so that a rotation drive may be carried out under control of a control unit 44, respectively.

[0033] Since the conveyance device 26 is constituted, thus, the manuscript laid on the manuscript base 12 It is back incorporated with rotation of a pickup roller 30, and a separation mechanism 32 separates into one sheet at a time. Where it was conveyed where a front flesh side is reversed by the reversal conveyance way 38, and a skew is taken by resist roller pair 38A and 38B It will enter from back between the conveyance belt 36 and platen glass PG, the image reading field top of platen glass PG will be conveyed according to transit of the clockwise rotation in drawing of the conveyance belt 36, and it will be conveyed to a predetermined image reading station.

[0034] {Explanation of the gate member 46}

On the other hand, in the lower part of front partial 14F of the body 14 of equipment The manuscript of the usual size which was located on the image reading field of platen glass PG, and the reading scan ended in the condition of having been located in the near side of the conveyance belt 36 mentioned above The 1st location to which paper is made to deliver on the delivery base 16 through the 2nd delivery opening 24 mentioned above with the transit drive of the clockwise rotation in drawing of the conveyance belt 36 (location shown in drawing 3), The manuscript of the large-sized size which was located on the image reading field of platen glass PG, and the reading scan for the first portion ended With the transit drive of the clockwise rotation in drawing of the conveyance belt 36, between the 2nd location

(location shown in drawing 4) conveyed to a near side through the 1st delivery opening 18 mentioned above, the gate member 46 by which a rotation drive is carried out changes, and it is arranged as a means.

[0035] the electromagnetism which does not illustrate this gate member 46 -- it is constituted so that a rotation drive may be carried out between the 1st location and the 2nd location which mentioned the solenoid above as a driving source, and this drive timing is controlled by the control unit 44 mentioned above.

[0036] Here, in this example, the gate member 46 is in the condition in the 1st location, and that tip enters in the crevice RE formed in the direct near side of the platen glass PG of the top face of a copying machine DC, and it is set up so that the manuscript of usual size conveyed by the near side can be dipped up out of on platen glass PG with transit of the conveyance belt 36. In addition, with rotation of the delivery roller 48, the manuscript of the dipped-up usual size will pass along the delivery conveyance way 50, and will be taken out out of the body 14 of equipment through the 2nd delivery opening 24, and paper will be delivered to it on the delivery base 16.

[0037] It is in the condition which the gate member 46 has in the 2nd location on the other hand, and while the tip estranges from the top face of a copying machine DC to the upper part, the conveyance belt 36 is contacted, and the manuscript of large-sized size conveyed by the near side with transit of the conveyance belt 36 from on platen glass PG passes the lower part as it is, and it is set up so that it may permit facing to the 1st delivery opening 18.

[0038] In this 1st example, by namely, the conveyance belt 36, the gate member 46 in the 1st location, the delivery roller 48, and the delivery conveyance way 50. Usually, the 1st delivery device (means) for delivering paper to the manuscript of size will be specified, and the 2nd delivery device (means) for delivering paper to the manuscript of large-sized size will be prescribed by the conveyance belt 36 and the gate member 46 in the 2nd location.

[0039] In addition, although the conveyance belt 36 will carry out a transit drive further clockwise and delivery actuation of the manuscript of large-sized size will be performed after the image reading scan of the second half part of the manuscript of large-sized size is completed, it can receive in paper output tray DT attached in the front face of a copying machine DC with this delivery actuation. This paper output tray DT is attached in the front face of a copying machine DC free [attachment and detachment] so that it may not usually become obstructive at the time of the copy of the manuscript of size.

[0040] In addition, in this 1st example, it is also good not to prepare this paper output tray DT, without being limited to preparing paper output tray DT for receiving the manuscript of large-sized size at the time of delivery. In this case, where the back end of this is pinched between the conveyance belt 36 and platen glass PG at the time of the delivery of the manuscript of large-sized size, [for example,] By suspending transit of the conveyance belt 36, the manuscript of large-sized size falls from the 1st delivery opening 18. When it will be prevented, and the back end of the manuscript of large-sized size falls out from between the conveyance belt 36 and platen glass PG and falling above the floor level comes out. The 1st location can be made to be able to carry out return rotation of the gate member 46 mentioned above, and the fall from the 1st delivery opening 18 of the manuscript of the large-sized size which pinched the back end of the manuscript of large-sized size between this and the top face of a copying machine DC, and was delivered to it can be prevented.

[0041] [Explanation of the automatic manuscript delivery approach]

Delivery actuation of the manuscript in the automatic manuscript feed gear 10 constituted as mentioned above is explained according to the size of a manuscript.

[0042] {Explanation of delivery actuation of the manuscript which is usually size} in the condition that ** (not shown) which was installed on the control panel CP of a copying machine DC and which directs delivery of a large-sized manuscript, for example is not pushed, delivery actuation of the manuscript of size is usually shown -- a manuscript delivery control signal (usually size information) is usually sent to the control unit 44 of the automatic manuscript feed gear 10 from control unit CU by the side of a copying machine DC (shown in drawing 5). the condition that, as for this control unit 44, the manuscript delivery control signal is usually inputted -- it is -- electromagnetism -- it maintains in the condition [having demagnetized the solenoid], and as shown in drawing 3, the gate member 46 is held in the 1st location.

[0043] Then, when copy initiation (or activation) ** installed on the control panel CP of a copying machine DC pushes in and drives Control unit CU by the side of a copying machine DC outputs a manuscript delivery start signal, and in response to this manuscript delivery start signal, the control unit 44 by the side of the automatic manuscript feed gear 10 carries out drive control of the conveyance device 26, as mentioned above. Only one manuscript of the usual size on the manuscript base 12 is conveyed on the image reading field of platen glass PG. If this thing [that the manuscript of size was usually conveyed by the position on the image reading field of platen glass PG] is detected, a control unit 44 will output a reading scan enabling signal to control unit CU by the side of a copying machine DC. This control unit CU performs predetermined copy actuation in response to this reading scan enabling signal, and copies the image of a

manuscript on the form of predetermined size. And control unit CU outputs the completion signal of a reading scan to the control unit 44 by the side of the automatic manuscript feed gear 10 with termination of a reading scan of a manuscript.

[0044] And this control unit 44 drives the 1st delivery device mentioned above in response to the completion signal of a reading scan, delivers paper to the manuscript on platen glass PG on the delivery base 16, and ends a series of manuscript delivery actuation.

[0045] {Explanation of delivery actuation of the manuscript of large-sized size}

If ** (not shown) which, on the other hand, directs delivery of the large-sized manuscript mentioned above is pushed in, control unit CU by the side of a copying machine DC will output the large-sized manuscript delivery control signal (large-sized size information) which shows delivery actuation of the manuscript of large-sized size to the control unit 44 of the automatic manuscript feed gear 10. this control unit 44 -- the input of a large-sized manuscript delivery control signal -- following -- electromagnetism -- a solenoid is excited, and as shown in drawing 4, the gate member 46 is moved to the 2nd location. In addition, in the following explanation, it shall be set up so that the manuscript (namely, manuscript of A2 size) of large-sized size may be made to copy on the form of A3 size. That is, in a copying machine DC, 70% of copy reduction percentage shall be set up.

[0046] Then, with the input of the manuscript delivery start signal mentioned above from control unit CU by the side of a copying machine DC, the control unit 44 by the side of the automatic manuscript feed gear 10 carries out drive control of the conveyance device 26, as mentioned above, and it conveys the manuscript of the large-sized size on the manuscript base 12 on the image reading field of platen glass PG. If what a part for the first portion of the manuscript of this large-sized size was conveyed for by the position on the image reading field of platen glass PG is detected, a control unit 44 will output the 1st reading scan enabling signal to control unit CU by the side of a copying machine DC. This control unit CU once memorizes the reading image information for the first portion of this large-sized manuscript in the memory section which does not perform and illustrate a reading scan in response to this 1st reading scan enabling signal.

[0047] And control unit CU outputs the 1st completion signal of a reading scan to the control unit 44 by the side of the automatic manuscript feed gear 10 with termination of the reading scan for the first portion of the manuscript of large-sized size. This control unit 44 carries out drive control of the conveyance device 26 mentioned above again in response to the 1st completion signal of a reading scan, and conveys the manuscript of large-sized size to a near side further. If what the second half part of the manuscript of this large-sized size was conveyed for by the position on the image reading field of platen glass PG is detected, a control unit 44 will output the 2nd reading scan enabling signal to control unit CU by the side of a copying machine DC. This control unit CU once memorizes the reading image information of the second half part of this large-sized manuscript in the memory section which does not perform and illustrate a reading scan in response to this 2nd reading scan enabling signal.

[0048] And control unit CU compounds the reading image information of a part the reading image information for the first portion of the manuscript of large-sized size, and the second half, and is made to copy it on the form of A3 size in the condition of having reduced to 70%. Moreover, control unit CU outputs the 2nd completion signal of a reading scan to the control unit 44 by the side of the automatic manuscript feed gear 10 with termination of a reading scan of the second half part of the manuscript of large-sized size. This control unit 44 drives the 2nd delivery device mentioned above in response to the 2nd completion signal of a reading scan, delivers paper to the manuscript on platen glass PG on paper output tray DT, and ends a series of manuscript delivery actuation.

[0049] Thus, the copy size which is specified in the area of platen glass PG according to the automatic manuscript feed gear 10 of this one example The manuscript of the large-sized size which has (for example, size) (for example, A2 size) twice the size of A3 Since a part for the first portion of this is first conveyed on the image reading field of platen glass PG, next it can be automatically conveyed as the second half part of this is conveyed on the image reading field of platen glass PG After carrying out the reading scan of each image one by one, it can permit copying automatically in the condition of having compounded on one sheet of form, and the workability will improve extremely as compared with having set the large-sized manuscript on the image reading field of platen glass PG by the conventional handicraft.

[0050]

[Explanation of other examples] It cannot be overemphasized that this invention is variously deformable in the range which does not deviate from the summary of this invention, without being limited to the configuration of the 1st example mentioned above. Below, the configuration and actuation of an automatic manuscript feed gear concerning the 2nd example and 3rd example of this invention are explained. In addition, in the following explanation, about the same part as the 1st example mentioned above, the same sign is attached and the explanation is omitted.

[0051]

[Explanation of the 2nd example] First, the configuration of the 2nd example of the automatic manuscript feed gear concerning this invention is explained with reference to drawing 6 thru/or drawing 12 of an accompanying drawing. [0052] It compares with the configuration of the automatic manuscript feed gear 10 of the 1st example mentioned above in automatic manuscript feed gear 10' of this 2nd example,

(1) After the manuscript which the manuscript base 12 is attached in the back side face which is front partial 14F of the body 14 of equipment, and was laid here is incorporated by the near side, it is once conveyed on the image reading field of platen glass PG. :

(2) On the manuscript base 12, only the manuscript of size is usually laid, and manual bypass insertion of the manuscript of large-sized size is carried out from the 1st delivery opening 18 and manual bypass insertion opening of combination. :

(3) Although conveyed with transit of only the counterclockwise rotation in drawing of the conveyance belt 36 only in the one direction of the counterclockwise rotation in drawing also at both the times of the time of manuscript taking in, and manuscript delivery, the manuscript of usual size laid in the manuscript base 12 Although the manuscript of the large-sized size by which manual bypass insertion was carried out is conveyed on the image reading field of platen glass PG with transit of the counterclockwise rotation in drawing of the conveyance belt 36 at the time of manuscript taking in from the manual bypass insertion opening 18 At the time of manuscript delivery, paper is delivered from the 1st delivery opening 18 with transit of the clockwise rotation in drawing of the conveyance belt 36. That is, the conveyance motors 42 which carry out the transit drive of the conveyance belt 36 differ greatly in three points the above of : constituted possible [a good inversion].

[0053] By automatic manuscript feed gear 10' of this 2nd example, as shown at drawing 6, symmetrically [the automatic manuscript feed gear 10 of the 1st example mentioned above], the manuscript incorporation opening 22 is formed in the rear face of front partial 14F of the body 14 of equipment by the detail, and the 2nd delivery opening 24 is formed in the front face of back partial 14R of the body 14 of equipment at it.

[0054] Where the method of right above of the 1st delivery opening 18 mentioned above is connected [drawing 7] on the other hand at this so that it may be shown, the manual bypass insertion opening 52 is formed, and this manual bypass insertion opening 52 is blockaded by the covering member 54 possible [disconnection]. That is, this covering member 54 is supported to revolve with that lower limit free [rotation], and by rotating a near side, as shown in drawing 8, the manual bypass insertion opening 52 is made as [open / wide].

[0055] the pickup roller 56 for incorporating the manuscript of the large-sized size by which manual bypass was carried out, and the pressure-welding roller 58 which **** to this arrange in a way among this manual bypass insertion opening 52 -- having -- **** -- these roller pair -- between the outlet of ***** of 56 and 58, and the lower part of the reversal conveyance way 38 mentioned above, the manual bypass carrying-in way 60 is interposed.

[0056] While this manual bypass carrying-in way 60 is connected [lower part / of guide member 38B of the outside of the reversal conveyance way 38 / edge / of the formed free passage hole / upper limit] by bottom guide member it is connected [bottom] 60A, and the lower limit edge of this free passage hole here The manuscript consists of bottom guide member 60B arranged in the condition of estranging only sufficient distance inserting in, respectively from the top face of bottom guide member 60A and the body CB of a copying machine. In addition, the manual bypass taking-out way 62 where the manuscript of large-sized size [finishing / a copy] is taken out from between bottom guide member 60B and the top faces of the body CB of a copying machine is specified.

[0057] in addition , the manuscript be carry out termination of the lower limit of guide member 38B of the outside which specify the reversal conveyance way 38 to the method of the edge of platen glass PG of right above , where sufficient gap to pass be have and estrange , and in case paper be deliver to the manuscript of the large-sized size which the manuscript reading scan ended , the near side edge of this manuscript constitute so that it may enter certainly between this guide member 38B and the top face of the body CB of a copying machine .

[0058] moreover, the roller pair mentioned above -- the detection sensor 64 which detects that the manuscript was inserted in the manual bypass insertion opening 52 is arranged just before 56 and 58. Although this detection sensor 64 is not illustrated for details, it consists of well-known photo interrupters, a manuscript is inserted between the light emitting device of a pair, and a photo detector, and it is constituted by intercepting between both optically so that a manual bypass manuscript insertion signal may be outputted to control unit CU by the side of a copying machine DC.

[0059] Here, in this 2nd example, it is prepared as a distinction means by which the detection sensor 64 distinguishes manuscript size. That is, control unit CU by the side of a copying machine DC receives the manual bypass manuscript insertion signal from the detection sensor 64 as large-sized size information, and in the condition that this manual bypass manuscript insertion signal is inputted, it is set up so that the size of the manuscript conveyed by automatic manuscript feed gear 10' may be recognized as large-sized size. On the other hand, this control unit CU judges it as what

has usually received size information from the detection sensor 64 in the condition that the manual bypass manuscript insertion signal is not outputted, and it is set up so that the size of the manuscript conveyed by automatic manuscript feed gear 10' may usually be recognized as size.

[0060] [Explanation of the automatic manuscript delivery approach of the 2nd example]

Delivery actuation of the manuscript in automatic manuscript feed gear 10' constituted as mentioned above is explained according to the size of a manuscript.

[0061] {Explanation of delivery actuation of the manuscript which is usually size}

In this condition that usually shows delivery actuation of the manuscript of size in drawing 7, except for the point that the transit direction of the conveyance belt 36 is opposite, since it is the same, explanation here is abbreviated to delivery actuation of the manuscript in the 1st example mentioned above.

[0062] {Explanation of delivery actuation of the manuscript of large-sized size}

In the condition of having rotated the covering member 54 on the other hand as shown in drawing 8, and having made the manual bypass insertion opening 52 opening wide If the rotated top face of the covering member 54 is made a guide, manual bypass insertion of the manuscript of large-sized size is carried out at the manual bypass insertion opening 52 and the detection sensor 64 outputs a manual bypass manuscript insertion signal Control unit CU by the side of a copying machine DC outputs the large-sized manuscript delivery control signal (large-sized size information) which shows delivery actuation of the manuscript of large-sized size to the control unit 44 of automatic manuscript feed gear 10' after predetermined time progress, for example, progress of about 2 - 3 seconds. This control unit 44 carries out the rotation drive of the pickup roller 56 with the input of a large-sized manuscript delivery control signal. In addition, in the following explanation, like the case of the 1st example, it shall be set up so that the manuscript of large-sized size may be made to copy on the form of A3 size. That is, in a copying machine DC, 70% of copy reduction percentage shall be set up.

[0063] Moreover, the control unit 44 by the side of automatic manuscript feed gear 10' carries out drive control of the conveyance device 26, as mentioned above, and carries out the transit drive of the conveyance belt 36 at the counterclockwise rotation in drawing while it starts the rotation drive of a pickup roller 56. Thus, the large-sized manuscript by which manual bypass insertion was carried out is conveyed by the manual bypass insertion opening 52 towards the backside with rotation of a pickup roller 56 and transit of the conveyance belt 36.

[0064] If what a part for the first portion of the manuscript of this large-sized size was conveyed for by the position on the image reading field of platen glass PG is detected, a control unit 44 will output the 1st reading scan enabling signal to control unit CU by the side of a copying machine DC. This control unit CU once memorizes the reading image information for the first portion of this large-sized manuscript in the memory section which does not perform and illustrate a reading scan in response to this 1st reading scan enabling signal.

[0065] And control unit CU outputs the 1st completion signal of a reading scan to the control unit 44 by the side of the automatic manuscript feed gear 10 with termination of the reading scan for the first portion of the manuscript of large-sized size. This control unit 44 carries out drive control of the conveyance device 26 mentioned above again in response to the 1st completion signal of a reading scan, and the manuscript of large-sized size is further turned to the backside, and it conveys it. In this condition, a part for the first portion of the manuscript of large-sized size will be temporarily discharged on the delivery base 16 through the 2nd delivery opening 24.

[0066] If what the second half part of the manuscript of this large-sized size was conveyed for by the position on the image reading field of platen glass PG is detected, a control unit 44 will output the 2nd reading scan enabling signal to control unit CU by the side of a copying machine DC. This control unit CU once memorizes the reading image information of the second half part of the manuscript of this large-sized size in the memory section which does not perform and illustrate a reading scan in response to this 2nd reading scan enabling signal.

[0067] And control unit CU compounds the reading image information of a part the reading image information for the first portion of the manuscript of large-sized size, and the second half, and is made to copy it on the form of A3 size in the condition of having reduced to 70%. Moreover, control unit CU outputs the 2nd completion signal of a reading scan to the control unit 44 by the side of the automatic manuscript feed gear 10 with termination of a reading scan of the second half part of the manuscript of large-sized size. In response to the 2nd completion signal of a reading scan, this control unit 44 carries out the transit drive of the conveyance belt 36 clockwise among drawing shortly, passes along the manual bypass taking-out way 62, delivers paper to the manuscript on platen glass PG out of the body 14 of equipment through the 1st delivery opening 18, and ends a series of manuscript delivery actuation.

[0068] In addition, without discharging on paper output tray DT which was able to attach in the transverse plane of the body CB of a copying machine the manuscript of the large-sized size to which paper was delivered free [attachment and detachment] like the 1st example in this 2nd example and preparing this paper output tray DT For example, at the

time of the delivery of the manuscript of large-sized size, where the back end of this is pinched between the conveyance belt 36 and platen glass PG, by suspending transit of the conveyance belt 36, the manuscript of large-sized size may fall from the 1st delivery opening 18, may fall above the floor level, and may constitute by the contents.

[0069] Thus, according to automatic manuscript feed gear 10' of this 2nd example, where it conveyed the manuscript of large-sized size automatically and this is divided into two in a copying machine DC like the case of the 1st example, can copy, but Although there is constraint which must carry out manual bypass insertion of the manuscript of large-sized size as compared with the case of the 1st example, since it is rare to copy two or more large-sized manuscripts like A2 size at once generally, it cannot be said that it is the constraint which has a problem. The manuscript of size can both also set the manuscript of large-sized size by the near side as compared with the 1st example, and can on the contrary usually do so the effectiveness that the workability of a manuscript set improves.

[0070] [Explanation of the 1st modification of the 2nd example]

In the 2nd example mentioned above, although it explained that the manual bypass insertion opening 52 with which manual bypass insertion of the manuscript of large-sized size is carried out, and the 1st delivery opening 18 with which paper is delivered to the manuscript of large-sized size [finishing / an image reading scan] were formed separately, this example can also prepare both in the common condition, without being limited to such a configuration.

[0071] Below, the configuration of the 1st modification which formed the manual bypass insertion opening 52 and the 1st delivery opening 18 in common is explained with reference to drawing 9 thru/or drawing 11 of an accompanying drawing. In addition, in the following explanation, the same sign is given to the same part as the 1st example and the 2nd example which were mentioned above, and the explanation is omitted into it.

[0072] In this 1st modification, the manual bypass opening 66 with which the manual bypass insertion opening 52 and the 1st delivery opening 18 in the 2nd example mentioned above were communalized is formed, and it is blockaded by the covering member 54 possible [disconnection] like the 2nd example. Moreover, since the manuscript of large-sized size will be discharged through here, the manual bypass carrying-in way 60 mentioned above will be specified as a manual bypass conveyance way 60 in this 1st modification.

[0073] On the other hand, termination of the guide member 38B of the outside which specifies the external surface of the reversal conveyance way 38 is carried out depending on the method of right above of the stopper plate ST which omitted that explanation in the 2nd example mentioned above, and bottom guide member 60A which specifies the top face of the manual bypass conveyance way 60 to this edge is connected.

[0074] In addition, as this stopper plate ST is shown in drawing 9, while that back end projects up more slightly than platen glass PG As it is indicated in drawing 11 as the 1st rocking location where the front end fell caudad rather than bottom guide member 60B, while the back end falls caudad from platen glass PG The front end is attached in the top face of the body CB of a copying machine free [rocking] between bottom guide member 60B and the 2nd rocking location made by abbreviation flush. The rocking drive of this stopper plate ST may be made to be carried out by the driving source which the rocking drive could be carried out by the driving source prepared in the body CB side of a copying machine, and was prepared in the automatic manuscript feed gear 10' side.

[0075] Moreover, the same gate member 46 is arranged in the unification section of the reversal conveyance way 38 and the manual bypass conveyance way 60 which were mentioned above with having used in the first example mentioned above. That is, this gate member 46 is supported to revolve free [rotation] between the 1st location which opens the reversal conveyance way 38 wide and blockades the manual bypass conveyance way 60, and the 2nd location which blockades the reversal conveyance way 38 and opens the manual bypass conveyance way 60 as shown in drawing 10 and drawing 11, as shown in drawing 9.

[0076] Thus, in the 1st modification of automatic manuscript feed gear 10' of the 2nd example constituted, when usually conveying the manuscript of size, as shown in drawing 9, while the gate member 46 is brought to the 1st location, the stopper plate ST is brought to the 1st rocking location. Consequently, the manuscript of usual size laid in the manuscript base 12 will be conveyed on the image reading field of platen glass PG through the reversal conveyance way 38.

[0077] On the other hand, when manual bypass of the manuscript of large-sized size is carried out, as shown in drawing 10, the stopper plate ST is in the condition held in the 1st rocking location, and the rotation drive of the gate member 46 is carried out in the 2nd location. By this, the manuscript of the large-sized size by which manual bypass insertion was carried out through the manual bypass opening 66 will be conveyed on the image reading field of platen glass PG through the manual bypass conveyance way 60 with rotation of a pickup roller 56 like the case of the 2nd example mentioned above.

[0078] Moreover, in case the manuscript of the large-sized size which the reading scan of the manuscript image of a part ended the second half is discharged on the image reading field of platen glass PG, as shown in drawing 11, the gate member 46 is in a condition [being held in the 2nd location], and the rocking drive of the stopper plate ST is carried

out shortly in the 2nd rocking location. By this, according to the transit drive of the clockwise rotation in drawing of the conveyance belt 36, the top face of the stopper plate ST will be guided to the manuscript of the large-sized size on platen glass PG, a near side will convey the manual bypass conveyance way 60, and paper will be delivered to it from the manual bypass opening 66.

[0079] [Explanation of the 2nd modification of the 2nd example]

moreover, resist roller pair 40A for [which usually takes the skew of the manuscript of size] having been incorporated from the manuscript base 12 in the 2nd example mentioned above, 40B, and the pickup roller pair for incorporating the manuscript of the large-sized size by which manual bypass insertion was carried out -- although it explained that it had 56 and 58 separately, where both are communalized, it can have this example, without being limited to such a configuration.

[0080] Below, the configuration at the time of communalizing both is explained as the 2nd modification of the 2nd example with reference to drawing 12.

[0081] That is, in this 2nd modification, as shown in drawing 12, the manual bypass insertion opening 54 is formed more nearly up than the arrangement location of resist roller pair 40A and 40B. And bottom guide member 60A of the manual bypass carrying-in way 60 as for which the end face section carried out opening to the manual bypass insertion opening 54 is connected [edge / of the formed free passage hole / upper limit], and bottom guide member 60B is connected [method / of right above / of resist roller pair 40A of guide member 38B of the outside of the reversal conveyance way 38, and 40B] by the lower limit edge of this free passage hole. In addition, the manual bypass taking-out way 62 is specified between guide member it was connected [guide / lower limit / of outside guide member 38B of the reversal conveyance way 38] 62A, and the top face of the body CB of a copying machine.

[0082] in addition, in the unification section of the manual bypass carrying-in way 60 and the reversal conveyance way 38 While forbidding the manuscript which blockades the free passage hole formed in the reversal conveyance way 38, and is conveyed from the reversal conveyance way 38 from always entering the manual bypass carrying-in way 60 The 1st [which can be opened with the manuscript which has the manual bypass carrying-in way 60 conveyed] gate sheet 68 formed, for example from the Mylar sheet is arranged. moreover, in the unification section of the manual bypass taking-out way 62 and the reversal conveyance way 38 While forbidding the manuscript which blockades the reversal conveyance way 38 and is discharged from platen glass PG from always entering the reversal conveyance way 38 The 2nd [which can be opened with the manuscript which has this reversal conveyance way 38 conveyed] gate sheet 70 formed, for example from the Mylar sheet is arranged.

[0083] Thus, while being able to do so the same effectiveness as the 2nd example mentioned above by constituting the 2nd example as shown in the 2nd modification, it can be managed even if it does not arrange the pressure-welding roller 58 which **** to a pickup roller 56 and this, and the configuration will be simplified, and cheap-ization of cost can be attained.

[0084] [Explanation of the 3rd modification of the 2nd example]

Moreover, although it explained that the manuscript base 12 was attached in the 2nd example mentioned above in the condition of having fixed to front partial 14F of the body 14 of equipment Without being limited to such a configuration, free [rotation into the front part of the body 14 of equipment], according to closing motion of attachment and this body 14 of equipment, this example so that the manuscript laid on this manuscript base 12 may not fall You may constitute so that an abbreviation level condition may be maintained, and a rotation drive may be relatively carried out to front partial 14F.

[0085] Below, the configuration at the time of making the manuscript base 12 movable is explained as the 3rd modification of the 2nd example with reference to drawing 13 and drawing 14.

[0086] That is, in this 3rd modification, the manuscript base 12 is supported to revolve by front partial 14F of the body 14 of equipment free [rotation] through a pivot 72 in that front edge. And from the 1 side of the end face section (front edge) of this manuscript base 12, it is attached in one so that the piece 74 of connection may extend aslant in a front lower part. On the other hand, the body 14 of equipment is supported to revolve by the back edge of the top face of the body CB of a copying machine free [rotation] through the pivot 76 in the back end section.

[0087] Here, the location (Sign X shows) where only predetermined distance was offset from this pivot 76, and the tip location (Sign Y shows) of the piece 74 of connection mentioned above are mutually connected so that only a fixed distance may always be estranged with the connection rod 78. In addition, in the condition that the body 14 of equipment is in the lock out location located on platen glass PG, as shown in drawing 14, the die length of this connection rod 78 is set up so that the inclination condition which the tip (front edge) biased up a little may be maintained.

[0088] Thus, since the automatic manuscript feed gear of this 3rd modification is constituted, when the paper jam of a

manuscript etc. arises, for example during the manuscript delivery actuation in this automatic manuscript feed gear, this body 14 of equipment is opened wide and it makes it rotate to an open position, the manuscript base 12 will rotate relatively to front partial 14F of the body 14 of equipment, and an abbreviation level condition will be maintained. Consequently, even if it rotates this body 14 of equipment from a lock out location to an open position in the condition [that a manuscript is laid on the manuscript base 12], the manuscript on the manuscript base 12 will continue being laid on this manuscript base 12 in the condition of having been stabilized, without falling from here.

[0089]

[Explanation of the 3rd example] Next, the configuration of the 3rd example of the automatic manuscript feed gear concerning this invention is explained with reference to drawing 15 and drawing 16 of an accompanying drawing.

[0090] It compares with the configuration of the automatic manuscript feed gear 10 of the 1st example mentioned above in 10" of automatic manuscript feed gears of this 3rd example,

(1) After the manuscript which the manuscript base 12 is attached in front partial 14F of the body 14 of equipment, and was laid here is incorporated in front partial 14F, it is once conveyed on the image reading field of platen glass PG. :

(2) The manuscript base 12 is supported to revolve free [migration] between the back location located above the body 14 of equipment, and the front location which projects ahead of the body 14 of equipment. On the manuscript base 12 in a back location, the manuscript of size is usually laid, and the manuscript of large-sized size is laid on the manuscript base 12 in a front location. :

(3) The delivery base 16 is formed movable and supported to revolve free [rotation] between the lower part location which carries out abbreviation adhesion on the top face of the body 14 of equipment, and the rise location raised above this top face. Usually, in case the delivery base 16 is held in a lower part location in case the manuscript of size is discharged, and the manuscript of large-sized size is discharged, the delivery bases 16 differ greatly in three points the above of : brought to an upper part location.

[0091] By 10" of automatic manuscript feed gears of this 3rd example, as shown at drawing 15, in a detail, the manuscript incorporation openings 22 for the manuscripts of size differ in the automatic manuscript feed gear 10 of the 1st example mentioned above, and are usually formed in the rear face of front partial 14F of the body 14 of equipment like automatic manuscript feed gear 10' of the 2nd example at it. Moreover, unlike the 2nd example, the manual bypass insertion opening 52 for carrying out manual bypass insertion of the manuscript of large-sized size is formed in the rear face of front partial 14F.

[0092] In addition, in this 3rd example, the 2nd delivery opening 24 is usually specified as common delivery opening of the manuscript of size, and the manuscript of large-sized size, and is formed in the front face of back partial 14R of the body 14 of equipment. That is, the 1st delivery opening 18 is not formed in this 3rd example.

[0093] On the other hand, as shown in drawing 16, the manuscript base 12 mentioned above is attached in front partial 14F of the body 14 of equipment free [migration], and is supported to revolve by the detail free [rotation] between the back location located above the body 14 of equipment, and the front location which projects ahead of the body 14 of equipment. Here, on the portable type manuscript base 12 (sign 12A shows drawing 16) in a back location, the manuscript of size is usually laid, and it is set up by the appearance in which the manuscript of large-sized size is laid on the portable type manuscript base 12 (sign 12B shows drawing 16) in a front location. In addition, the manuscript of size is usually laid on the portable type manuscript base 12 in a front location, and it may be made to carry out manual bypass insertion of this.

[0094] Moreover, in this 3rd example, the manual bypass carrying-in way 60 is interposed between the method parts of right above of resist roller pair 40A of the reversal conveyance way 38, and 40B, and the manual bypass insertion opening 52 mentioned above. The pressure-welding roller 58 which **** to a pickup roller 56 and this is arranged in the halfway section of this manual bypass carrying-in way 60 like the 2nd example. In addition, the free passage hole formed in the reversal conveyance way 38 is always blockaded, and while forbidding that the manuscript conveyed from the manual bypass carrying-in way 60 enters the reversal conveyance way 38, the gate sheet 80 it can open by the manuscript which has the reversal conveyance way 38 conveyed and which was formed, for example from the Mylar sheet is arranged in the unification section of the manual bypass carrying-in way 60 and the reversal conveyance way 38.

[0095] Here, in this 3rd example, as mentioned above, the delivery base 16 is formed movable, and the front end of this movable delivery base 16 is supported to revolve by the end face section of back partial 14R so that it can rotate freely between the lower part location which carries out abbreviation adhesion on the top face of the body 14 of equipment, and the rise location raised above this top face. Under this movable delivery base 16, the rotation device 74 for carrying out the rotation drive of this between a lower part location and a rise location is arranged. While being supported to revolve by the top face of the body 14 of equipment free [rotation], this rotation device 82 a drive motor 84, the drive

gear 86 fixed to the motor shaft of this drive motor 84, and the end face section It is attached at the tip of the rotation lever 90 by which the follower gear 88 which gears with the drive gear 86 was fixed to this end face section, and this rotation lever 90 free [rotation], and it has the Oshiage roller 92 which **** on the inferior surface of tongue of the movable delivery base 16, and is constituted.

[0096] If detected by the 1st detection sensor which will not be illustrated if this rotation device 82 is constituted so that drive control may be carried out under control of the control unit 44 mentioned above, and the portable type manuscript base 12 is located in a back location Namely, in case the manuscript of size is usually discharged, a control unit 44 carries out drive control of the drive motor 84. In case the manuscript of large-sized size will be discharged if detected by the 2nd detection sensor which will not be illustrated if the movable delivery base 16 is brought to a lower part location and the portable type manuscript base 12 is located in a front location namely, drive control of the drive motor 84 is carried out, and it controls to bring the movable delivery base 16 to an upper part location.

[0097] In addition, as the rise location of the movable delivery base 16 mentioned above is shown in drawing 16, the tip of the movable delivery base 16 pushed up by this is set up so that it may be located more nearly up than the manuscript taking-in opening 22 formed in front partial 14F of the body 14 of equipment. It will be prevented certainly that the manuscript of the large-sized size discharged from the delivery opening 24 will be again incorporated in front partial 14F from the manuscript taking-in opening 22 by this.

[0098] On the other hand, since the portable type manuscript base 12 is located in a back location and the movable delivery base 16 is located in a lower part location in case the manuscript of size is usually discharged, the manuscript discharged will enter between this portable type manuscript base 12 and the movable delivery base 16, and paper will be certainly delivered to it on the movable delivery base 16 in a lower part location by this.

[0099] Thus, while being able to do so the effectiveness in the 2nd example mentioned above by constituting 10" of automatic manuscript feed gears of the 3rd example, and the same effectiveness, unlike the 2nd example, the manuscript of large-sized size can be discharged on the delivery base 16. Moreover, it is not necessary to constitute the conveyance motor 42 in the conveyance device 26 in a good inversion like the 1st example mentioned above.

[0100]

[Explanation of other modifications] In explanation of the example mentioned above, although it took the post and explained when an electronic reproducing unit was applied as an example of the image reader with which the automatic manuscript feed gear concerning this invention is attached, it cannot be overemphasized that the equipment which has image reading functions, such as a scanner and electronic facsimile apparatus, will be applied as an image reader, without limiting this invention to such application.

[0101] Moreover, in explanation of the example mentioned above, although it explained that the digital type electronic reproducing unit DC was applied as an electronic reproducing unit, this invention can be applied to the usual electronic reproducing unit which is not a digital type, for example, without being limited to such application. In this case, a part for the first portion of the manuscript of the large-sized size of A2 size automatically conveyed on platen glass by this automatic manuscript feed gear will be first copied on the form of predetermined size, and the second half part of this manuscript conveyed on platen glass next will be copied on the form of predetermined size. That is, where the manuscript of the large-sized size of A2 size is divided into two sheets of forms, also when copying automatically, the automatic manuscript feed gear of this invention can be applied.

[0102] Moreover, although it took the post and explained in explanation of the example mentioned above when the manuscript of A2 size was applied as a manuscript of large-sized size and the manuscript below A3 size was usually applied as a manuscript of size This invention usually, without being limited to such application with the manuscript of size Meaning the size specified in the image reading field of the platen glass of the image reader with which this automatic manuscript feed gear is attached, large-sized size means bigger size than the manuscript of the size specified by the image reading field of this platen glass.

[0103] As explained in full detail above, it is characterized by equipping with the following the automatic manuscript feed gear shown in the 1st example. It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field The conveyance means for conveying a manuscript along the direction which intersects perpendicularly with the longitudinal direction of an image reading field in the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of platen glass, and sending in on the image reading field of platen glass The control means which a conveyance means is driven, makes a part for the first portion of the manuscript of large-sized size send in on the image reading field of platen glass, and a conveyance means is driven [control means] after termination of the image reading scan for the first

portion, and makes the second half part of the manuscript of large-sized size send in on the image reading field of platen glass when a manuscript is twice the large-sized size of predetermined size

[0104] Furthermore, a control means drives a conveyance means after termination of an image reading scan of the second half part of the manuscript of large-sized size, and makes paper deliver to the manuscript of large-sized size from platen glass.

[0105] Furthermore, a control means drives a conveyance means, when a manuscript is twice the large-sized size of predetermined size. Send in a part for the first portion of the manuscript of large-sized size on the image reading field of platen glass, output the 1st reading scan enabling signal to an electronic reproducing unit, and a conveyance means is driven in response to the 1st completion signal of a reading scan from an electronic reproducing unit. Send in the second half part of the manuscript of large-sized size on the image reading field of platen glass, output the 2nd reading scan enabling signal to an electronic reproducing unit, and a conveyance means is driven in response to the 2nd completion signal of a reading scan from an electronic reproducing unit. Paper is made to deliver to the manuscript of large-sized size from platen glass.

[0106] Moreover, it is characterized by equipping with the following the automatic manuscript delivery approach shown in the 1st example. It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field. The 1st process which is made to convey the manuscript of large-sized size along the direction which intersects perpendicularly with the longitudinal direction of an image reading field in the automatic manuscript delivery approach for conveying automatically a manuscript twice the large-sized size of predetermined size, and sends in a part for the first portion of the manuscript of large-sized size on the image reading field of platen glass. The 2nd process which makes the second half part of the manuscript of large-sized size send in on the image reading field of platen glass after termination of the image reading scan for the first portion

[0107] Furthermore, the 3rd process to which the manuscript of large-sized size is made to deliver from platen glass is further provided after termination of an image reading scan of a part in the second half.

[0108] Furthermore, the process at which the 1st process sends in a part for the first portion of the manuscript of large-sized size on the image reading field of platen glass, After a part for the first portion of the manuscript of large-sized size is sent in on the image reading field of platen glass, the process which outputs the 1st reading scan enabling signal to an electronic reproducing unit is included. The 2nd process The process which sends in the second half part of the manuscript of large-sized size on the image reading field of platen glass in response to the 1st completion signal of a reading scan from an electronic reproducing unit, After the second half part of the manuscript of large-sized size is sent in on the image reading field of platen glass The 3rd process includes further the process to which the manuscript of large-sized size is made to deliver from platen glass in response to the 2nd completion signal of a reading scan from an electronic reproducing unit including the process which outputs the 2nd reading scan enabling signal to an electronic reproducing unit.

[0109] This invention moreover, the automatic manuscript feed gear shown in an example 1 It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The image of the manuscript laid on the image reading field of platen glass to the electronic reproducing unit constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field. The automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of platen glass is characterized by providing the following. Platen glass is wrap-lock-out-located. The body attached in the top face of an electronic reproducing unit free [rotation] between the open positions which open platen glass An installation means by which a manuscript twice the large-sized size of predetermined size is laid in the condition of having made the longitudinal direction of an image reading field, and that longitudinal direction crossing at right angles while being attached in this body and laying the manuscript of the usual size below predetermined size. The conveyance means for being attached in a body, conveying the manuscript laid in the installation means along the direction which intersects perpendicularly with the longitudinal direction of an image reading field, and sending in on the image reading field of platen glass, the 1st delivery means which a reading scan ended and which makes the manuscript of size usually deliver to the top face of a body, and the 2nd delivery means which makes the manuscript of the large-sized size which a reading scan ended deliver to the side of a body

[0110] Furthermore, the change means usually changed between the 1st location which the reading scan ended, and which the top face of a body is made to deliver to the drive of a conveyance means with the manuscript of size, and the 2nd location which the side of a body is made to deliver to the drive of a conveyance means with the manuscript of the large-sized size which the reading scan ended is provided.

[0111] Furthermore, it changes and a change means is equipped with the change driving means which brings the change gate to the 2nd location when the change gate is brought to the 1st location case [the gate and the case whose manuscript is usually size] it is arranged free [rotation] between the 1st location and the 2nd location, and a manuscript is large-sized size.

[0112] Furthermore, the body of an automatic manuscript feed gear is the back end edge, and is supported to revolve by the top-face back end edge of an electronic reproducing unit free [rotation].

[0113] Furthermore, platen glass is installed in longitudinal-direction sideways to an actuated valve position, an installation means is attached in the posterior part of a body, and it has the manuscript base where a manuscript is laid upward in a manuscript side, and taking-in conveyance is once carried out towards a back side from a manuscript base, and a manuscript is conveyed on the image reading field of platen glass, where a front flesh side is reversed in the shape of U character.

[0114] Furthermore, the manuscript of large-sized size turns termination of read operation to after and an actuated valve position, and is delivered to a near side.

[0115] Moreover, it is characterized by equipping with the following the automatic manuscript feed gear shown in the example 2. It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, and platen glass is wrap-lock-out-located in the electronic reproducing unit constituted so that the reading scan of the image of the manuscript laid on the image reading field of platen glass may carry out along with the longitudinal direction of an image reading field in the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of platen glass. The body with which manual bypass insertion opening with which manual bypass of the manuscript twice the large-sized size of predetermined size is carried out in the condition of having made the longitudinal direction of an image reading field and the longitudinal direction crossing at right angles while being attached in the top face of an electronic reproducing unit, and which is inserted was formed free [rotation between the open positions which open platen glass] An installation means by which it is attached in this body and the manuscript of the usual size below predetermined size is laid It is attached in a body and the manuscript of large-sized size which was laid in the installation means and which was usually inserted through the manuscript or manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of an image reading field. The conveyance means for sending in on the image reading field of platen glass, the 1st delivery means which the reading scan ended and which makes the manuscript of size usually deliver to the top face of a body, and the 2nd delivery means which makes the manuscript of the large-sized size which the reading scan ended deliver to the side of a body

[0116] Furthermore, the change means usually changed between the 1st location which the reading scan ended, and which the top face of a body is made to deliver to the drive of a conveyance means with the manuscript of size, and the 2nd location which the side of a body is made to deliver to the drive of a conveyance means with the manuscript of the large-sized size which the reading scan ended is provided.

[0117] Furthermore, it changes, and when [the gate and whose size of a manuscript are usually sizes] a change means is arranged free [rotation] between the 1st location and the 2nd location, the change gate is brought to the 1st location, when it is large-sized size, it has the change driving means which brings the change gate to the 2nd location, and changes to a press member, and the gate consists of same members.

[0118] Moreover, it is characterized by equipping with the following the automatic manuscript feed gear shown in the example 2. It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, and platen glass is wrap-lock-out-located in the electronic reproducing unit constituted so that the reading scan of the image of the manuscript laid on the image reading field of platen glass may carry out along with the longitudinal direction of an image reading field in the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of platen glass. The body with which manual bypass insertion opening with which manual bypass of the manuscript twice the large-sized size of predetermined size is carried out in the condition of having made the longitudinal direction of an image reading field and the longitudinal direction crossing at right angles while being attached in the top face of an electronic reproducing unit, and which is inserted was formed free [rotation between the open positions which open platen glass] An installation means by which it is attached in this body and the manuscript of the usual size below predetermined size is laid It is attached in a body and the manuscript of large-sized size which was laid in the installation means and which was usually inserted through the manuscript or manual bypass insertion opening of size is conveyed along the direction which intersects perpendicularly with the longitudinal direction of an image reading field. The conveyance means for sending in on the image reading field of platen glass, and in case a manuscript is sent in on the image reading field of platen glass In case it is scrupulous and there is nothing in the size of a manuscript, a conveyance means is driven so

that it may be conveyed along a predetermined direction, and paper is delivered to a manuscript from platen glass. The control means which carries out drive control of the conveyance means so that it may convey along an opposite direction with a predetermined direction and paper may be delivered from manual bypass insertion opening, when it is large-sized size when the size of a manuscript is usually size as it conveys along a predetermined direction and paper is delivered to the top face of a body and

[0119] Furthermore, the body of an automatic manuscript feed gear is the back end edge, and is supported to revolve by the top-face back end edge of an image reader free [rotation].

[0120] Furthermore, platen glass is installed in longitudinal-direction sideways to an actuated valve position, an installation means is attached in the anterior part of the body of an automatic manuscript feed gear, and it has the manuscript base where a manuscript is laid upward in a manuscript side, and taking-in conveyance is once carried out towards an actuated valve position at a near side from a manuscript base, and a manuscript is conveyed on the image reading field of platen glass, where a front flesh side is reversed in the shape of U character.

[0121] Furthermore, in case paper is delivered to the manuscript of large-sized size, a stop means to stop the delivery direction back end by predetermined thrust is provided.

[0122] Furthermore, a stop means is equipped with the press member which forces and stops the delivery direction back end of the manuscript of large-sized size by predetermined thrust on platen glass.

[0123] Moreover, it is characterized by equipping with the following the automatic manuscript feed gear shown in the 3rd example. Platen glass is wrap-lock-out-located in the automatic manuscript feed gear for having platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface, conveying a manuscript automatically to the image reader constituted so that the reading scan of the image of the manuscript laid on the image reading field of platen glass might be carried out along with the longitudinal direction of an image reading field, and sending in on the image reading field of platen glass. The body attached in the top face of an image reader free [rotation] between the open positions which open platen glass. The 1st location located in a body above the top face of a body. While being attached movable between the 2nd location which projects in the side of a body and laying the manuscript of the usual size below predetermined size. The manuscript base in which a manuscript twice the large-sized size of predetermined size is laid in the condition of having made the longitudinal direction of an image reading field, and the longitudinal direction crossing at right angles. When a manuscript base is located in the 1st location, the manuscript laid in the manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of an image reading field. The 1st conveyance means for sending in on the image reading field of platen glass. When a manuscript base is located in the 2nd location, the manuscript laid in the manuscript base is conveyed along the direction which intersects perpendicularly with the longitudinal direction of an image reading field. The paper output tray to which the manuscript which it was arranged on the 2nd conveyance means for sending in on the image reading field of platen glass and the top face of a body, and the reading scan ended is delivered.

[0124] Furthermore, the manuscript of size is usually laid in the manuscript base in the 1st location, and the manuscript of large-sized size is laid in the manuscript base in the 2nd location.

[0125] Furthermore, a paper output tray is brought to the location rotated from the evacuation location to the upper part, when the evacuation location which approached the top face of a body when it was attached movable to a body and a manuscript base was located in the 1st location is brought and a manuscript base is located in the 2nd location.

[0126] Moreover, the automatic manuscript feed gear shown in the example 1. It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field. In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of platen glass. A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of an image reading field. When [to which the size of a manuscript indicates it to be a conveyance means for sending in on the image reading field of platen glass that smaller than predetermined size it is usually size] size information is usually brought about. Drive control of the conveyance means is carried out so that a manuscript may be conveyed continuously, and when the large-sized size information which shows that it is bigger large-sized size than predetermined size is brought about, the control means which carries out drive control of the conveyance means intermittently is provided.

[0127] Furthermore, the 1st conveyance path equipped with the carrying-in way which usually conveys the manuscript of size on platen glass, and the 1st delivery way where platen glass to the 1st delivery opening discharges the manuscript of usual size [finishing / image reading] from manuscript taking-in opening with which the manuscript of size is usually incorporated. The 2nd conveyance path equipped with a carrying-in way and the 2nd delivery way where platen

glass to the 2nd delivery opening discharges the manuscript of large-sized size [finishing / image reading] is provided. [0128] Moreover, the automatic manuscript feed gear shown in the example 2 It has platen glass which has the image reading field laid so that the longitudinal manuscript of predetermined size may cover the whole abbreviation surface. The manuscript laid on the image reading field of platen glass to the image reader constituted so that a reading scan might be carried out along with the longitudinal direction of an image reading field In the automatic manuscript feed gear for conveying a manuscript automatically and sending in on the image reading field of platen glass A manuscript is conveyed along the direction which intersects perpendicularly with the longitudinal direction of an image reading field. When [to which the size of a manuscript indicates it to be a conveyance means for sending in on platen glass that smaller than predetermined size it is usually size] size information is usually brought about A manuscript is conveyed through the 1st conveyance way, and when the large-sized size information which shows that it is bigger large-sized size than predetermined size is brought about, the control means which makes a manuscript convey through the 2nd conveyance way is provided.

[0129] Furthermore, when the large-sized size information which drives a conveyance means continuously, conveys a manuscript through the 1st conveyance way when [the size of a manuscript indicates it to be that smaller than predetermined size it is usually size] size information is usually brought about, and shows that it is bigger large-sized size than predetermined size is brought about, a control means drives a conveyance means intermittently and makes a manuscript convey through the 2nd conveyance way.

[0130] Furthermore, it is characterized by equipping the 1st conveyance way with the following. Usually, the carrying-in way which usually conveys the manuscript of size on platen glass from manuscript taking-in opening with which the manuscript of size is incorporated It is the manual bypass conveyance way where it has the 1st delivery way where platen glass to the 1st delivery opening discharges the manuscript of usual size [finishing / image reading], and the 2nd conveyance way conveys the manuscript of large-sized size on platen glass from manual bypass insertion opening with which manual bypass insertion of the manuscript of large-sized size is carried out. The 2nd delivery way where platen glass to the 2nd delivery opening discharges the manuscript of large-sized size [finishing / image reading]

[0131] Furthermore, it has a distinction means to distinguish the size of a manuscript, and this distinction means outputs large-sized size information to a control means, when the manuscript size which usually outputted size information to the control means, and was distinguished when the distinguished manuscript size was usually size is large-sized size.

[0132] Furthermore, a distinction means is equipped with the manual bypass sensor which detects that the manuscript was inserted in manual bypass insertion opening, and in the condition that the manuscript is not inserted here, this manual bypass sensor usually outputs size information to a control means, and outputs large-sized size information to a control means in the condition that a manuscript is inserted here.

[0133] Furthermore, the 2nd delivery opening is formed in common with manual bypass insertion opening.

[0134] Moreover, the 1st location in which the manuscript of large-sized size is laid in the automatic manuscript feed gear of an example 3, The manuscript base arranged movable between the 2nd location in which the manuscript of size is laid is provided. Usually, the above-mentioned distinction means It has the manuscript base sensor which detects the location of this manuscript base, and when a manuscript base is located in the 1st location, large-sized size information is outputted to a control means, and this manuscript base sensor usually carries out the control means output of the size information, when a manuscript base is located in the 2nd location.

[0135] According to the above-mentioned example, a manuscript twice the size of the manuscript size specified in the size of platen glass can be automatically conveyed on the image reading field of platen glass.

[0136] Moreover, while the manuscript of the size below the manuscript size specified in the size of platen glass is automatically made by conveyance ***** on the image reading field of platen glass, a manuscript twice the size of the size of platen glass can also be automatically conveyed on the image reading field of platen glass.

[0137] Furthermore, where it divided into one half the manuscript twice the size of the manuscript size specified in the size of platen glass and it is divided, it can convey automatically one by one on the image reading field of platen glass.

[0138]

[Brief Description of the Drawings]

[Drawing 1] It is the perspective view showing roughly the appearance from the transverse-plane side of a configuration of having attached the 1st example of the automatic manuscript feed gear concerning this invention in the image reader.

[Drawing 2] It is the perspective view showing roughly the appearance from the back side of a configuration of being shown in drawing 1.

[Drawing 3] It is drawing of longitudinal section in which being in the condition which has a gate member in the 1st location, and showing the internal structure of the automatic manuscript feed gear shown in drawing 1 and drawing 2 where a part is fractured.

[Drawing 4] It is drawing of longitudinal section in which being in the condition which has a gate member in the 2nd location, and showing the internal structure of the automatic manuscript feed gear shown in drawing 1 and drawing 2 where a part is fractured.

[Drawing 5] It is the block diagram showing the control system in the 1st example roughly.

[Drawing 6] It is the perspective view showing roughly the appearance configuration of the 2nd example of the automatic manuscript feed gear concerning this invention.

[Drawing 7] It is drawing of longitudinal section in which being in the condition that the covering member was blockaded, and showing the internal configuration of the important section of the automatic manuscript feed gear shown in drawing 6 where a part is judged.

[Drawing 8] It is drawing of longitudinal section in which being in the condition that the covering member was opened wide, and showing the internal configuration of the important section of the automatic manuscript feed gear shown in drawing 6 where a part is judged.

[Drawing 9] It is drawing of longitudinal section showing the internal configuration of the important section of the 1st modification of the automatic manuscript feed gear of the 2nd example in the condition of having usually carried in the manuscript of size.

[Drawing 10] It is drawing of longitudinal section shown in the condition of having carried in the manuscript of the large-sized size by which manual bypass insertion was carried out in the internal configuration of the important section of the automatic manuscript feed gear shown in drawing 9.

[Drawing 11] It is drawing of longitudinal section shown in the condition of having taken out the manuscript of large-sized size with which the reading scan ended the internal configuration of the important section of the automatic manuscript feed gear shown in drawing 9.

[Drawing 12] It is drawing of longitudinal section showing the internal configuration of the important section of the 2nd modification of the automatic manuscript feed gear of the 2nd example.

[Drawing 13] It is the top view showing roughly the public welfare of the 3rd modification of the automatic manuscript feed gear of the 2nd example.

[Drawing 14] It is the side elevation showing roughly the rotation device of a manuscript base of the automatic manuscript feed gear shown in drawing 13.

[Drawing 15] It is the perspective view showing roughly the appearance configuration of the 3rd example of the automatic manuscript feed gear concerning this invention.

[Drawing 16] It is drawing of longitudinal section showing a part of internal structure of the automatic manuscript feed gear shown in drawing 13 in the condition of having fractured.

[Description of Notations]

CB Body of a copying machine

CP Control panel

DC Digital type electronic reproducing unit (copying machine)

DT Paper output tray

PG Platen glass

RE Crevice

ST stopper plate

10(10', 10") Automatic manuscript feed gear

12 Manuscript base

14 Body of equipment

14 F Front part

14 R Back part

16 Delivery base

18 1st delivery opening

20 Crevice

22 Manuscript incorporation opening

24 2nd delivery opening

26 Conveyance device

28 Stopper member

30 Pickup roller

32 Separation mechanism

32 A Separation roller

32 Bnbsp; Separation pad
36 Conveyance belt
38 Reversal conveyance way
38A;38 Bnbsp; Reversal guide member
40A;40 Bnbsp; Resist roller pair
42 Conveyance motor
44 Control unit
46 Gate member
48 Delivery roller
50 Delivery conveyance way
52 Manual bypass insertion opening
54 Covering member
56 Pickup roller
58 Pressure-welding roller
60 Manual bypass carrying-in way
60 A Bottom guide member
60 B Bottom guide member
62 Manual bypass taking-out way
64 Detection sensor
66 Manual bypass opening
68 1st gate sheet
70 2nd gate sheet
72 Pivot
74 Piece of connection
76 Pivot
78 Connection rod
80 Gate sheet
82 Rotation device
84 Drive motor
86 Drive gear
88 Follower gear
90 Rotation lever
92 Oshiage roller

[Translation done.]